S. HRG. 101-109

STRATEGIC PETROLEUM RESERVE AMENDMENTS OF 1989

HEARING

BEFORE THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

ON

S. 694

To amend the Energy Policy and Conservation Act to extend the authority for the strategic petroleum reserve, and for other purposes.

MAY 4, 1989

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STRATEGIC PETROLEUM RESERVE AMENDMENTS OF 1989

THURSDAY, MAY 4, 1989

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The committee met, pursuant to notice, at 9:35 a.m. in room SD-366, Dirksen Senate Office Building, Hon. J. Bennett Johnston, chairman, presiding.

OPENING STATEMENT OF HON. J. BENNETT JOHNSTON, U.S. SENATOR FROM LOUISIANA

The CHAIRMAN. The hearing will come to order. President Reagan officially declared on January 3, 1989, that growing oil imports constitute a threat to our national security. President Bush has since affirmed this view in his comments about Alaskan oil. Our strategic petroleum reserve, the largest oil stockpile in the world, is the nation's major defense against an oil supply interruption.

On June 30, 1989, all of the legal authority of the petroleum reserve will expire. Clearly, the Congress must enact timely legislation to extend that authority. That legislation is an excellent opportunity to address several important issues with regard to the SPR.

First, I think we should be planning now to expand the SPR to one billion barrels. Practically all the experts seem to agree that the 750 million barrel stockpile we are now striving to build will be an inadequate line of defense in light of the enormous oil imports now forecast for the late 1990s and the ever-increasing consumption in this country.

Second, I think we should continue the 75,000 barrel a day fill rate requirement that is in current law. Logic dictates that it be even higher.

Third, I think we should give DOE flexibility at the beginning of an oil supply interruption to sell the oil it happens to be transporting to the SPR facilities without requiring that it first be deposited in the SPR before being withdrawn.

I have introduced legislation S. 694 to address these points, but there is one other major concern that overshadows all discussions of the SPR, and that is, how will we pay for it? It is clear to me that the current mechanism of financing the SPR with appropriated funds is inadequate. It simply does not work.

Members of this committee have fought tirelessly for SPR funding. Without their effort—and I especially recognize Senator McClure in this regard—the United States would be substantially less secure than it is now. But the fact is, the fill rate that we can afford in this budget climate is not keeping up with the rise in oil imports.

In terms of days of protection from an oil supply disruption, the SPR is shrinking, not growing. We are losing the battle and it is time to seek an additional tactic.

The real problem here is that the Federal budget makes no allowance for the fact that oil purchased for the SPR is a valuable commodity that will likely rise in value. I have not addressed in my original legislation alternative financing concepts for the SPR. It is a complex subject and the array of proposals is daunting, but I also sense that the cream is rising to the top. It is my hope that in markup of SPR legislation this Committee can expand not only the ultimate size of the SPR but also the method for financing it.

Some years ago in this Committee I proposed an amendment which put the SPR off budget. I said at the time, with a little jocular twist, that this was the most honest of the dishonest alternatives before us and we indeed did put it off budget, and in the ensuing years—as I recall, two or three years—we filled the SPR at a greater rate and with more oil than at any other time in history and as a matter of fact those years when we were off budget were responsible for most of the filling of the SPR.

When David Stockman came to town he said, that is dishonest. We must put everything on budget. So we dutifully put it on budget and we reduced the fill rate down to about 20 or 25 percent of what it had been and there it remains, being squeezed ever more greatly in each ensuing year as the size of the deficit goes up, as the demands for spending also increase. So we have got to find an alternative way to finance this thing, either by putting it off budget or by some other means of financing and I hope to hear about that today.

[The prepared statement of Senators Heflin and McClure and the text of S. 694 follow:]

INTRODUCTORY REMARKS BY MR. HEFLIN
AT HEARING ON THE STRATEGIC PETROLEUM RESERVES AMENDMENTS
OF 1989, BEFORE THE SENATE ENERGY COMMITTEE

MAY 4, 1989

MR. CHAIRMAN: I AM DELIGHTED THAT THIS COMMITTEE IS HOLDING HEARINGS TODAY ON S. 694, A BILL TO REAUTHORIZE FOR FIVE YEARS THE ENERGY POLICY AND CONSERVATION ACT (EPCA) OF 1975 (PL 94-163), WHICH EXPIRES JUNE 30, 1989. THE BILL ALSO MANDATES THAT THE DEPARTMENT OF ENERGY EXPAND THE RESERVE'S CURRENT CRUDE OIL STORAGE CAPACITY OF 750 MILLION BARRELS TO ONE BILLION BARRELS.

THE BIG QUESTION, HOWEVER, MR. CHAIRMAN, IS HOW DO WE FINANCE DOE'S ESTIMATE OF $8.3 BILLION NEEDED TO ACHIEVE THIS EXPANDED TARGET RESERVE. IT IS MY UNDERSTANDING THAT THIS ESTIMATE IS BASED AT CURRENT OIL PRICE COST. IT IS ALSO MY UNDERSTANDING THAT DOE HAS ESTIMATED THAT $17 BILLION HAS BEEN SPENT ON THE RESERVE, TO DATE, AND THAT ANOTHER $5.5 BILLION WILL NEED TO BE SPENT IN ORDER TO REACH THE 750-MILLION-BARREL LEVEL.

I KNOW THAT S. 694 REQUIRES THE SECRETARY OF DOE TO CONSIDER LEASING PRIVATELY OWNED STORAGE FACILITIES FOR THE EXPANSION. I AM ALSO AWARE THAT GAO HAS EXAMINED 40 DIFFERENT TYPES OF FINANCING PROPOSALS, BUT THAT ONLY THREE OF THEM ENJOY SIGNIFICANT SUPPORT. I FURTHER REALIZE THAT THE MANNER IN WHICH CBO SCORES EACH PROPOSAL WILL BE A CRITICAL FACTOR IN WEIGHING EACH OF THE MORE REASONABLE FINANCIAL PROPOSALS.

I WISH TO RESERVE JUDGMENT ON WHICH FINANCIAL PROPOSAL I WOULD SUPPORT UNTIL AFTER I HAVE HAD AMPLE OPPORTUNITY TO REVIEW THE RECORD, WHICH WE WILL BE MAKING HERE IN THE COMMITTEE. CERTAINLY, THE PROPOSAL SET FORTH IN S. 694--LEASING PRIVATELY OWNED STORAGE FACILITIES--MERITS A GREAT DEAL OF CONSIDERATION.

GENERALLY SPEAKING, MR. CHAIRMAN, I WHOLEHEARTEDLY SUPPORT THE CONCEPT OF HAVING A MINIMUM 90-DAY OIL SUPPLY IN THE RESERVE. OUR MID-APRIL 1989 SUPPLY OF APPROXIMATELY 567 MILLION BARRELS OF OIL IS MOST INADEQUATE AND DOES NOT AFFORD A COMFORTABLE CUSHION TO PROTECT THE NATION FROM FOREIGN OIL CUTOFFS.

I HAVE BEEN ADVISED THAT IN 1985 THE RESERVE HELD ENOUGH OIL TO PROTECT US FROM APPROXIMATELY 115 DAYS OF IMPORTED OIL DISPLACEMENT. TODAY, I HAVE BEEN ADVISED THAT OUR RESERVE COULD ONLY PROTECT US FROM AN 81-DAY OIL IMPORT DISRUPTION. NEEDLESS TO SAY, THIS IS NOT THE WAY TO PROTECT OUR NATION'S ENERGY SECURITY.

I WISH TO COMMEND THE CHAIRMAN FOR INCLUDING IN HIS BILL A PROVISION WHICH WOULD AMEND THE CURRENT ACT BY ALLOWING OIL ALREADY PURCHASED AND ON ITS WAY TO THE RESERVE FOR STORAGE TO BE AUCTIONED WHILE IN TRANSIT AND SENT DIRECTLY TO A REFINERY INSTEAD OF BEING DEPOSITED IN THE RESERVE FIRST, AND THEN WITHDRAWN. THIS CERTAINLY APPEARS TO BE THE MORE PRUDENT THING TO DO IN A NATIONAL ENERGY EMERGENCY.

THANK YOU, MR. CHAIRMAN.

OPENING STATEMENT
SENATOR JAMES A. McCLURE (R-ID)
COMMITTEE ON ENERGY AND NATURAL RESOURCES
THURSDAY, MAY 5, 1989

STRATEGIC PETROLEUM RESERVE AMENDMENTS

Good morning. On many occasions over the years since the 1973 Arab oil embargo, I have emphasized that the evolution of the United States' energy emergency preparedness policies must be a dynamic, not static, process. And the cornerstone of our energy emergency preparedness, if not our only preparedness, is the Strategic Petroleum Reserve.

Thirteen years have passed since we initially authorized the Strategic Petroleum Reserve. At the time, successful completion was considered a monumental task.

In the intervening years, we have resolved many difficult questions and problems. But now, due to the support and dedication of many individuals, we will have by the end of fiscal year 1989, about 578 million barrels of oil in the SPR. This represents over 75 percent of the 750 million barrel Reserve authorized by the Congress. It is important to note, however, that what is most important is not the quantity of oil, but rather how many days of protection is being provided by the Reserve.

Not too long ago, the strategic stocks held by IEA member countries were the equivalent to more than 160 days of 1986 net imports, compared

to the minimum obligation under the International Energy Agreement of 90 days of net oil imports. At the time, the United States was encouraging further improvements in strategic stocks, particularly by those few IEA member states who continue to fall short of their IEA obligations in this regard.

But now, due to trends in oil imports, the United States could in the near future fail to meet its own IEA obligations. If this were to occur it would significantly undermine the United States' credibility and leadership on this vital issue. Therefore, it is particularly appropriate at this time that the Committee consider authorizing a larger SPR.

In addition, it is appropriate that the Committee consider alternative financing measures for such an expanded Reserve. Each such financing method possesses its strengths and weaknesses. And each must be considered from the perspective of who pays and the level of government or private sector involvement. However, the paramount concern must be who controls SPR drawdown. Drawdown is now controlled by the President based on national energy security and economic concerns. I believe that Presidential control must be retained.

I am pleased by the extensive review and reports of this matter now being undertaken by the Department of Energy and the General Accounting Office. The Department's report on expansion of the Reserve

to 1 billion barrels was called for by the FY89 Interior and Related Agencies Appropriations Act, in which I, as the ranking minority member, played a major role. These two reports to the Congress will contribute significantly to our understanding of the issues before the Committee, and I look forward to today's testimony from the DOE and GAO as well as the other witnesses.

II

101ST CONGRESS
1ST SESSION

S. 694

To amend the Energy Policy and Conservation Act to extend the authority for the strategic petroleum reserve, and for other purposes.

IN THE SENATE OF THE UNITED STATES

APRIL 4 (legislative day, JANUARY 3), 1989

Mr. JOHNSTON introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

---

A BILL

To amend the Energy Policy and Conservation Act to extend the authority for the strategic petroleum reserve, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be referred to as the "Strategic Petroleum Reserve Amendments of 1989".

EXTENSION OF AUTHORITY

SEC. 2. Section 171 of the Energy Policy and Conservation Act, as amended (42 U.S.C. 6251), is amended by striking the term "June 30, 1989" everywhere it appears and substituting the term "June 30, 1994".

ENLARGEMENT TO ONE BILLION BARRELS

SEC. 3. (a) Section 159 of the Energy Policy and Conservation Act (Public Law 94–163), as amended (42 U.S.C. 6239), is amended by adding the following new subsection:

"(i) The Secretary shall by January 30, 1990, amend the Strategic Petroleum Reserve Plan to prescribe plans for completion of storage of one billion barrels of petroleum products in the Reserve. Such amendment shall comply with the provisions of this section and shall detail the Secretary's plans for the design, construction, leasing or other acquisition, and fill of storage and related facilities of the Reserve to achieve such one billion barrel storage. Such amendment shall not be subject to the congressional review procedures contained in section 551 of Public Law 94–163 (42 U.S.C. 6421). In assessing alternatives in the development of such plans, the Secretary shall consider leasing privately owned storage facilities.".

(b) Section 160 of the Energy Policy and Conservation Act, as amended (42 U.S.C. 6240), is amended—

(1) by substituting in paragraph (c)(3)—

(A) the term "fiscal year 1995" for the term "fiscal years 1988 and 1989", and

(B) the term "1,000,000,000" for the term "at least 750,000,000", and

(2) in paragraph (d)(1)—

(A) by substituting in subparagraph (A) the term "750,000,000" for the term "1,000,000,000", and

(B) by striking the period at the end of subparagraph (B), substituting a semicolon, and adding a new subparagraph (C) as follows:

"(C) after January 30, 1990, the Secretary has amended the Strategic Petroleum Reserve Plan as required by section 159(i).".

PREDRAWDOWN DIVERSION OF SPR OIL

SEC. 4. Section 161 of the Energy Policy and Conservation Act, as amended (42 U.S.C. 6241), is amended by adding the following new subsection:

"(h) If the President finds that a severe energy supply interruption may be imminent and that the world price of crude oil has, as a result, increased substantially, then the execution of new contracts for petroleum products for injection into the Strategic Petroleum Reserve may be curtailed or suspended for not to exceed thirty days, and the provisions of sections 160 (c) and (d) shall not apply: *Provided, however,* That such funding may be extended for additional thirty-day periods upon a finding that the conditions that justified the initial finding still exist. The period during which such Presidential declaration is in effect, and the quantity of any petroleum products involved, shall be disregarded in applying the provisions of such subsections for periods following the effec-

tive period of such declaration. When such a declaration is in effect, the Secretary is authorized to sell, in accordance with rules or regulations which he shall promulgate, any petroleum products acquired for storage in, but not injected into, the Strategic Petroleum Reserve. The receipts from such sales shall be deposited in the "SPR Petroleum Account" under section 167 and shall be subject to section 167(d).".

○

The CHAIRMAN. Our first witness today is our esteemed friend from Hawaii whose advice we almost always take—in fact, I think we always take it in this committee—Spark Matsunaga. Spark, glad to have you.

STATEMENT OF HON. SPARK M. MATSUNAGA, U.S. SENATOR FROM HAWAII

Senator MATSUNAGA. Thank you very much, Mr. Chairman and members of the Energy and Natural Resources Committee. I thank you for granting me this privilege of testifying before you today. As a former member of this committee I sorely miss participating in your deliberations.

It is my understanding that you are considering the reauthorization of that section of the Energy Policy and Conservation Act of 1975 which established the Strategic Petroleum Reserve, SPR, as a contingency safety net in the event of any disruptions in our national importation of oil from abroad.

First and foremost, I do not think there can be any serious thought of not renewing SPR's lease on life. If anything, its existence is more urgent today for our national security than at the time the enabling legislation was originally enacted. In recognition of that undeniable fact, I am today testifying to urge your adoption of my bill, S. 915, as an amendment to the reauthorization legislation you will report out of this Committee.

My proposal addresses the vulnerability of my state of Hawaii to an oil supply disruption by making explicit the authority under existing law for regional petroleum reserves. Also, it is a revised version of a bill, S. 668, which I introduced earlier in this session with Senator Inouye as co-sponsor.

The new bill was introduced this week in response to certain technical objections raised by the Department of Energy in House testimony with regard to H.R. 1418, a companion measure to S. 668.

The Energy Policy and Conservation Act, EPCA, conferred discretionary authority on the Secretary of Energy to establish regional reserves in lieu of central SPR storage in insular or petroleum import-dependent areas of the country. The Aloha State qualifies on both counts.

However, the Department of Energy has consistently maintained that it is most economic to serve Hawaii from the central SPR on the Gulf Coast or from the diversion of tankers at sea carrying foreign or Alaskan North Slope crude oil.

This line of reasoning on DOE's part, Mr. Chairman, is not convincing and it will not stand up to examination of the facts. Indeed, a recent study conducted for the State of Hawaii concludes that neither the Gulf Coast nor Alaska will provide energy security for the state during the 1990s and supplies from the Pacific Basin will become increasingly in tight supply.

This is because the industrial nations will become increasingly dependent on imported oil during the next decade, a period in the United States when North Slope production in Alaska will begin a precipitous decline.

The swing-producers for imports into the United States will be in the Middle East, notably Saudi Arabia. It will be a period when U.S. dependency on foreign oil will exceed half of the nation's consumption, but Hawaii's oil dependency is far greater right now, Mr. Chairman.

Petroleum represents 90 percent—yes, 90 percent—of Hawaii's energy supply, half of it from foreign producers—foreign sources—and we are totally oil-dependent for transportation fuels such as jet fuel, upon which our economy is based.

According to the study commissioned by the state and released last November, Hawaii is expected to be totally dependent on foreign imports for its crude oil supply by 1994. That is only five years from now. The West Coast states are expected to import approximately one third of their oil from overseas a few years later, but before the turn of the century.

Mr. Chairman, I ask that the summary chapter of this report, entitled "A Review of Factors Relating to the Establishment of a Regional Petroleum Reserve in Hawaii" prepared for the Hawaii State Department of Business and Economic Development by Bruce Wilson of Washington, DC, be included as part of the hearing record and the complete report be made a part of the Committee file.

The CHAIRMAN. Without objection.

Senator MATSUNAGA. Mr. Chairman, the Pacific Basin today imports half of its oil from the Middle East. If there was a supply disruption—especially one in the Persian Gulf—the Pacific Basin demand for available Australian and Southeast Asian crude oil will increase dramatically. Analysis indicates that the United States shipping requirements must be met by foreign tankers, since the domestic tanker fleet is inadequate to meet disruption scenario demands.

A similar situation exists in terms of the general cargo fleet, as the head of the Military Sealift Command has recently warned. There is also a deficiency in the number of small tankers, those below 80,000 dead weight tons designed to carry product rather than crude, within the domestic U.S. fleet.

For the reasons stated, Mr. Chairman, reauthorization of the SPR legislation should specify more precisely when regional reserves are expected to come into play. The bill which I have introduced with Senator Inouye would require regional reserves in states, and I quote, "in which imports of crude oil, residual fuel oil, or any refined petroleum product" exceed 50 percent of demand, if such states are exclusively dependent upon delivery of such oil or product "by means other than pipeline, rail, or highway." Present law authorizes regional reserves for insular areas under what is construed to be discretionary language.

Mr. Chairman and members of the committee, Hawaii's vulnerability and particular dependence on petroleum imports for energy is indisputable. I ask this Committee's sympathetic consideration.

Thank you very much.

[The statement submitted by Senator Matsunaga follows:]

A REVIEW OF FACTORS RELATING TO THE ESTABLISHMENT OF A REGIONAL PETROLEUM RESERVE IN HAWAII

Prepared for:

State of Hawaii
Department of Business and
Economic Development

Prepared by:

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November 1988

This report has been cataloged as follows:

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INTRODUCTION

This report covers an important element of the State's contingency planning dealing with energy emergency preparedness.

Hawaii is highly vulnerable to a cutback or cutoff of oil. Our ability to obtain petroleum supplies during a shortage situation, such as that experienced in the 1973-74 oil crisis, is of major concern.

Imported oil accounts for 90 percent of the energy consumed in the State, double that of the Nation. The U.S. Mainland's energy security is bolstered by its supplies of domestic crude oil, coal, natural gas, shale oils, hydro and nuclear power, interconnecting electric grids, and oil and gas pipeline distribution systems. An embargo threat on the Mainland is only partial; for Hawaii, it is total.

In a complete embargo, Hawaii's only source of supply is located some 6,000 miles away in the salt dome caverns of Texas and Louisiana. This location is where the Federal government has established the Strategic Petroleum Reserve (SPR), which was authorized by the Energy Policy and Conservation Act of 1975. The Act also authorizes any non-contiguous areas and areas that are over 20 percent dependent on foreign oil to have a component share of the SPR in their respective territory. Hawaii, although it qualifies on both counts, has not been successful in its efforts to have Regional Petroleum Reserve (RPR) storage located within its borders.

Over the last ten years Hawaii State officials and members of the Hawaii Congressional delegation have steadfastly supported the case for Hawaii regional storage. Discussions have been held with Department of Energy (DOE) staff regarding the SPR location and drawdown, and Hawaii has participated in local and DOE surveys and studies covering storage facilities, consumption and supply patterns, inventory levels, refinery output data, site selection, storage construction costs, and crude oil delivery schedules in Hawaii.

The only exception to DOE's opposition to a Hawaii RPR took place in 1979. The U.S. Department of Energy, with President Carter's approval, informed Hawaii's Governor Ariyoshi of its intention to store 3 million barrels of oil in Hawaii as revenues became available from the proposed Windfall Profits Tax on crude oil. The tax was enacted; but the needed Energy Security Fund, from which the RPR monies were to have come, was not included in the legislation, negating Hawaii's efforts.

The Department of Energy's opposition to a regional storage in Hawaii has been predicated on the firm stand that the central Gulf Coast storage best serves the Nation's oil security needs. If Hawaii cannot satisfactorily be served from the Gulf storage, it must be assumed that diversions of West Coast oil shipments would become available through exchanges, and that a regional reserve in Hawaii would not be economic because of the higher cost of steel tank above ground storage in Hawaii compared with the lower cost of Gulf salt dome cavern storage. This cost analysis ignores the potential economic impact of a petroleum supply disruption in the event of a supply shortfall.

This report has been commissioned by the State Department of Business and Economic Development. Several conclusions reached in this report give support to Hawaii's position that in-region storage of oil is needed in Hawaii. Some of these points are:

- A Regional Petroleum Reserve should be sited in Hawaii to provide an assured supply of fuel that will protect the State's economy and meet the needs of public services essential to Hawaii's citizens.

- The Energy Policy and Conservation Act of 1975 established a Gulf-area Strategic Petroleum Reserve and also authorized non-contiguous import dependent areas, such as Hawaii, to have in-state Regional Petroleum Storage. The Department of Energy has consistently maintained, however, that Hawaii can best be served from the Gulf central storage or from diversion of tankers at sea carrying foreign or Alaskan North Slope crude oil.

- Petroleum represents 90 percent of Hawaii's energy supply. The islands require large volumes of transportation fuels, especially jet fuel, for a healthy economy. Without resupply, Hawaii's endurance time is 30-50 days.

- Neither the Gulf Coast nor Alaska will provide energy security for Hawaii during the 1990s, and supplies to the Pacific Basin will become increasingly tight.

- During the 1990s the "developed world" is expected to become more heavily dependent on imported oil as Alaskan production begins a precipitous decline. The "swing-producers" for imports into the U.S. will be in the Middle East--especially Saudi Arabia. U.S. import dependence is forecast to rise from 35 percent of total consumption in 1987 to more than 50 percent during the 1990s.

- By 1994, it is forecast that Hawaii will be totally dependent on foreign imports for its crude oil supply. The West Coast of the U.S. is expected to import plus or minus one-third of its oil in the late 1990s.

- The Pacific Basin imports half of its oil from the Middle East. If there is a supply disruption--especially one in the Persian Gulf--the Pacific Basin demand for available Australian and Southeast Asian crude oils will increase dramatically.

- Figures indicate that U.S. shipping requirements must be met by foreign tankers and the domestic tanker fleet is inadequate to meet a disruption scenario demand. There is also a deficiency in the number of small (below 80m dwt) tankers within the domestic U.S. Fleet.

The military constitutes some 20 percent of the local Hawaii energy market. The U.S. Government would suffer a large dollar penalty if the U.S. Gulf to Hawaii shipping were added to Hawaii defense energy costs in an

emergency. The Defense Fuel Supply Center contract purchases in Hawaii are for support of the Western military presence. Of equal note is support of military interests in consideration of Hawaii as an advance military base.

Also important to Hawaii's energy needs in a supply crisis are the following:

- o Transiting military logistical aircraft: The tempo of these flights increases during the tension of oil supply emergency. Honolulu Airport and Hickman AFB both provide support to a combination of civilian, charter, and military-owned planes.

- o Fuel is required by civilian employees and military personnel traveling to and from military bases, including Pearl Harbor Shipyard, in private vehicles.

- o Contractor support in the form of vehicle repair and service functions and equipment use for military bases and activities.

- o Power supply to all military bases (including Pearl Harbor Shipyard) draws electric power from Hawaiian Electric Company.

Taking these factors into consideration serves to increase the military energy draw as closer to 40 percent of the total Hawaii energy market, strengthening the case for an RPR in Hawaii.

The State of Hawaii remains firm in its conviction that only a Regional Petroleum Reserve, sited in Hawaii, will meet our energy needs during an emergency. I strongly recommend this report to those interested in the Strategic Petroleum Reserve program in general, and to those concerned with the benefits that security of supply would provide to Hawaii and its widening economic base.

for Roger A. Ulveling, Director
Department of Business and Economic Development

Executive Summary

- A Regional Petroleum Reserve (RPR) should be sited in Hawaii to protect the economy of the State, to ensure the security of the citizens of the State, and to provide for the national defense. Relatively low oil prices would dictate that an RPR in Hawaii be sited and filled with volumes equal to 90 days of consumption as soon as possible.

- RPRs were enacted under the Energy Policy and Conservation Act (EPCA) of 1975. Section 157(c) conferred discretionary authority on the Secretary of DOE to establish RPRs--in lieu of central SPR storage--in insular or petroleum import-dependent areas of the U.S. Hawaii qualifies on both counts; however, DOE has consistently maintained that it is most economic to serve Hawaii from the central SPR on the Gulf Coasts of Texas and Louisiana or from the diversion of tankers at sea carrying Foreign or Alaskan North Slope (ANS) crude oil.

- Petroleum represents 90 percent of Hawaii's energy supply, especially transportation fuels. The islands require large volumes of jet fuel for a healthy economy. Endurance time in Hawaii is 30-50 days.

- Neither the Gulf Coast nor Alaska will provide energy security for Hawaii during the 1990s, and supplies from the Pacific Basin will become increasingly in tight supply.

- During the 1990s, the "developed world" is expected to become more heavily dependent on imported oil as ANS production begins a precipitous decline. The "swing-producers" for imports into the U.S. will be in the Middle East--especially Saudi Arabia. U.S. import dependence is forecast to rise from 35 percent of total consumption in 1987 to more than 50 percent during the 1990s.

- By 1994, it is forecast that Hawaii will be totally dependent on imports for its crude oil supply. The West Coast of the U.S. is expected to import plus or minus one-third of its oil in the late 1990s.

- The Pacific Basin imports half of its oil from the Middle East. If there is a supply disruption--especially one in the Persian Gulf--the Pacific Basin demand for available Australian and Southeast Asian crude oils will increase dramatically.

- Figures indicate that U.S. shipping requirements must be met by foreign tankers and the domestic tanker fleet is inadequate to meet disruption scenario demand. There is also a deficiency in the number of small (below 80m dwt) tankers within the domestic U.S. Fleet.

SUMMARY

The Energy Policy and Conservation Act (EPCA), enacted in 1975, calls for the creation of central Strategic Petroleum Reserve (SPR) and Regional Petroleum Reserves (RPRs). Section 157(c) of the EPCA conferred discretionary authority to the Secretary of Energy to permit the substitution of oil in the SPR in lieu of oil stored in RPRs if the substitutions are desireable for purposes of economy and efficiency and can be made without compromising the objectives of Regional Petroleum Reserves. Since 1977 the Department of Energy has developed a 540 million barrel SPR (with 750 million barrels total to be stored eventually) on the Gulf Coast. The DOE has, since 1975, steadfastly opposed the creation of a Regional Petroleum Reserve in Hawaii. Citing its authority under Section 157(c) of the EPCA, the Department of Energy maintains that Hawaii's oil security needs are effectively served by the Gulf Coast SPR.

The Department of Energy is against the establishment of a Regional Petroleum Reserve because: the cost of constructing above ground steel tanks in Hawaii is equivalent to $8 to $9 per barrel of storage capacity and is more expensive than underground salt dome storage capacity along the Gulf Coast; Salt dome storage costs $5 to $6 per barrel; and, in the event of a supply disruption, SPR oil on the Gulf Coast could be exchanged for Alaska oil to be delivered to Hawaii. Such exchanges would eliminate the need to transport SPR crude oil from the Gulf Coast to Hawaii and purportedly demonstrate that Hawaii's energy security needs are adequately served by the central SPR. Hawaii is considered by DOE to be well located to benefit from the structural changes that have been occurring in the Pacific Basin oil markets, that is that new production

has been developed throughout Asia and the West Coast of North America; and these supplies, according to DOE, should remain available to Hawaii during an oil crisis.

This report presents the justification for creating a Regional Petroleum Reserve in Hawaii. Prospective world and domestic oil developments; the tanker fleet; the likely supply and distribution of U.S. oil during a disruption in foreign supplies; Hawaii's unique petroleum situation; and the impracticability of delivering SPR oil to Hawaii during a supply crisis are all considered and analyzed. These issues are summarized below.

1. During the 1990s, the industrialized countries are expected to become more heavily dependent on imported oil--with most of the increase coming from the Middle East. The prospect of greater reliance on oil from this insecure region presents energy security risks to all importing countries.

2. U.S. oil import dependence is forecast to rise from 35 percent of total petroleum supply in 1987 to more than 50 percent during the 1990s. This development is in marked contrast to the 1978-87 period, when imports declined from 42 percent to 35 percent of the total U.S. petroleum supply.

3. The petroleum balance on the U.S. West Coast is forecast to change during the 1990s from an indigenous crude oil surplus to oil import dependence. This change will be caused by falling production from the North Slope of Alaska, which is expected to begin its decline in 1990. By 1994 Hawaii is forecast to be totally dependent on foreign oil, and the West Coast is expected to import approximately one-third of its oil

in the late 1990s. Presumably, most of the imported oil will come from the Middle East, which is forecast to be the incremental supplier to the world market during the 1990s.

4. The Department of Energy's assurance that Pacific Basin crude oil will remain readily available during a supply crisis is doubtful. The Pacific Basin imports half of its oil from the Middle East; and, if Persian Gulf supplies are disrupted, this development would intensify the demand within the Pacific Basin for the remaining supplies of oil available for export from Southeast Asia and Australia.

5. The foreign and domestic tanker fleets are addressed in this report within the context of the U.S. shipping demands expected to arise during a cut-off in foreign oil supplies. Shipping is needed to distribute SPR oil, to maintain the water-borne movement of domestic oil, and to support the needs of the U.S. military in the event of war. It was found that the domestic fleet is inadequate to meet U.S. emergency support needs and that a significant portion of the shipping requirements would have to be met by foreign tankers; however, the availability of smaller foreign tankers under such conditions is problematic, and it cannot be expected that this alternative will fully supplement U.S. shipping needs during a crisis.

6. The likely distribution of domestic oil during a cut-off in foreign supplies has been analyzed, drawing on studies conducted by the National Petroleum Council and the U.S. Maritime Administration (MARAD). This report addresses prospective foreign oil supply disruptions occurring in 1990 and 1995. The findings show that the Eastern U.S. is effectively served by the SPR, which is interconnected with pipelines serving the

Middle West and Gulf Coast. SPR marine terminals assure rapid water-borne delivery of reserve oil to the East Coast.

7. There are several shortcomings associated with the SPR which relate to prospective oil developments during the 1990s. The first concern is the size of domestic emergency oil reserves. International Energy Agency (IEA) rules call for security stocks sufficient for a complete offsetting of the loss of oil imports for 90 days. Present U.S. plans call for a 750 million barrel reserve in the early 1990s. This reserve should be capable of supplying approximately 5 million barrels per day during the first 90 days of a supply disruption. The surge capacity of a 750 million barrel reserve is clearly below the 8 million to 9 million barrels per day of imports forecast for the U.S. in the 1990s. It is reasonable to argue that the size of the U.S. security reserve should be increased beyond 750 million barrels.

8. A second concern is the location of U.S. security oil reserves. While the Gulf Coast SPR provides effective energy security to the Eastern U.S., this is not the case with Hawaii and the West Coast. Over the 1977-88 period, DOE dismissed the energy security concerns of the West Coast and Hawaii arguing that the region enjoyed surplus supplies of domestic crude oil and that the disruption of foreign oil supplies would have minimal effects on the region. During the 1990s, the West Coast is expected to become a net importer, with Hawaii becoming entirely dependent on foreign oil by 1994. The prospect of this development raises the issue of locating some of the U.S. security oil reserve outside the Gulf Coast.

9. Hawaii's dependence on petroleum is unique, as it represents 90 percent of the State's primary energy supply. Petroleum is used pervasively in Hawaii to meet the demands of the large commercial aviation industry, surface transportation, electric power generation, the U.S. military, and the SNG and LPG gas distribution systems (the manufacture of synthetic natural gas (SNG) in Hawaii requires specific crude oils to produce the paraffinic naphtha from which the SNG is processed). In contrast, the U.S. Mainland depends on petroleum for 40 percent of its primary energy, with the balance supplied by coal, natural gas, nuclear power, and hydro-electricity. Hawaii is especially vulnerable to disruption in foreign oil supplies. Presently, Hawaii receives half of its oil from foreign sources and is expected to become totally dependent on foreign supplies after 1994. The endurance time of commercial oil stocks on the islands is approximately 30 to 50 days for individual petroleum products.

10. The Gulf Coast SPR does not provide meaningful energy security to Hawaii. The SPR/Hawaii security issue was considered in terms of: exchange sales for Alaska oil; the time required to deliver SPR oil to Hawaii; and the transportation cost incurred in moving SPR oil to Hawaii.

11. The concept of SPR/Alaska oil exchanges has some validity as long as Alaska oil supplies exceed the West Coast requirements and the surplus is transported to the Eastern U.S. The Alaska oil surplus on the West Coast is forecast to disappear in the mid-1990s and this development will eliminate the prospect of SPR exchanges being used to direct Alaska oil to Hawaii. While Alaska oil could still be directed to Hawaii, such an

action would reduce the supply of domestic oil available to the West Coast, which is expected to become a net importer of foreign oil after 1995.

12. The response time associated with delivering SPR oil to Hawaii ranges from 53 to 70 days and makes SPR oil an undesirable supply alternative. The response interval includes the elapsed time between the President's decision to drawdown the SPR and physical delivery of the oil to Hawaii. SPR response time must be contrasted with the endurance capabilities of Hawaii's commercial petroleum stocks, which range from 30 to 50 days under different supply disruption scenarios. Therefore, SPR oil would arrive in Hawaii after commercial stocks are depleted and petroleum supplies have been drastically curtailed.

13. The cost of transporting SPR oil to Hawaii is another consideration in deciding whether or not Hawaii should have RPR. SPR oil deliveries to the Eastern U.S. are unlikely to experience major increases in transportation costs because most of the oil will move through fixed tariff pipelines. The additional transportation costs incurred in moving SPR oil to Hawaii range from $4 to $6 per barrel and place Hawaii's consumers at a disadvantage in relation to consumers on the U.S. Mainland.

14. The justification for establishing a Regional Petroleum Reserve in Hawaii is based on equity, cost, and oil supply factors. Hawaii's taxpayers pay for U.S. oil security stockpiles and should receive the same degree of protection as taxpayers on the U.S. Mainland. Furthermore, the Department of Energy's argument that Gulf Coast SPR storage is less expensive than above ground steel storage tanks in Hawaii is valid only if SPR oil can be delivered expeditiously to Hawaii at low transportation costs, which cannot be done. If these transportation

costs are added to the cost of Gulf Coast storage, they are equal to or greater than the cost of establishing Regional Petroleum Reserve storage in Hawaii. The most important consideration is that during a cut-off in foreign oil supplies occurring in the 1990s, Gulf Coast SPR oil cannot be delivered to Hawaii in time to avert a drastic curtailment in petroleum supplied to Hawaii's commercial sector. This would cause severe dislocations in the economy of the State of Hawaii.

The CHAIRMAN. Thank you very much, Senator Matsunaga. The position of the Department of Energy has been that Hawaii can be adequately taken care of by tanker traffic; that the cost of storage on the Gulf Coast is much less than storage in Hawaii.

First, why cannot either by the law or by the practical operation of the market—either one—can we not provide for Hawaii by tankers?

Senator MATSUNAGA. Because as I stated, Mr. Chairman, in times of emergency the tankers—especially foreign tankers—will not be available and we do not have sufficient tankers in our fleet to take care of Hawaii. Besides referring to cost, Mr. Chairman, in calculating and comparing SPR to transporting oil from the central storage area, the West Coast, they have not figured on the cost of transportation.

The cost of transportation of oil from the West Coast to Hawaii is very high and of course in the event of an emergency would even double or triple and that cost would be much, much higher than actual storage in Hawaii.

The CHAIRMAN. You are talking about storage for crude oil in Hawaii?

Senator MATSUNAGA. Crude oil. What we are proposing is 10 million barrels, 7 million barrels of which will be crude oil and 3 million commercial jet fuel. We expect to have—well, this will hit about an estimated $5.5 billion of oil. No, I am sorry. That is referring to the whole national scene. According to estimates of storage given by the Chicago firm, it will cost $50 to $55 million to store the 10 million barrels.

The CHAIRMAN. Do you have a cost per barrel?

Senator MATSUNAGA. It will be about $5 a barrel.

The CHAIRMAN. $5 per barrel? Is Hawaii furnishing a site?

Senator MATSUNAGA. Yes. Hawaii would be furnishing the site.

The CHAIRMAN. How about the equipment? Is that above-ground storage—is it below-ground or above-ground storage?

Senator MATSUNAGA. This will be above-ground storage.

The CHAIRMAN. Would Hawaii pay for the tanks?

Senator MATSUNAGA. As a matter of fact, we already have the tanks, which were surplus from World War II.

The CHAIRMAN. You already have the tanks, so all you are asking DOE to do is supply the crude oil?

Senator MATSUNAGA. Supply the crude oil to fill the tanks. When you import 90 percent of your energy from abroad and more than 50 percent of which is foreign oil, really, we are in a pickle compared to all other states.

The CHAIRMAN. Senator Burns, did you have any questions?

Senator BURNS. Thank you, Mr. Chairman. Senator Matsunaga, maybe you can clarify something for me. You mentioned in your testimony of oil production, or imports coming in from Australia and the Pacific Rim. It is my understanding Australia does not have a very big source of crude and I am unfamiliar with the availability off the Pacific Rim. Do you have those figures at the tip of your fingers? Is their production enough?

Senator MATSUNAGA. We are talking about the Alaskan Northern Slope supply for one thing and the refinery—one of the refineries in Hawaii—just recently entered into an agreement. As a

matter of fact, the Australian company bought controlling interest, practically, in the refinery in Hawaii and we think that the situation will improve somewhat, because having a steady source—or rather, a steady refinery—dependable refinery in Hawaii, the Australian producers will look to the future to increase their supply.

Senator BURNS. I can sympathize with that, sitting out there. Thank you very much.

The CHAIRMAN. Thank you very much, Senator Matsunaga.

Senator Matsunaga testified they would furnish all the facilities. So, in effect, all we have to do is furnish the crude oil, that is correct.

Senator MATSUNAGA. That is the informal promise that I was given by the state.

I do hope they will keep their word. But if they do not, let us be sure, I will find somebody without having the company hire my wife. [Laughter.]

The CHAIRMAN. Thank you very much.

Next we have the Honorable J. Allen Wampler, Assistant Secretary for Fossil Energy, the Department of Energy.

Welcome to the committee. Glad to have you.

I will say for the witnesses, all statements will be put into the record, and we would prefer, strongly prefer that testimony be highlighted.

We do not want to plow the same ground with all witnesses. We know we need it. The committee does not need to be convinced that we need additional storage. But I see you have got some charts. Oh, that is our chart I am advised.

Senator MATSUNAGA. Mr. Chairman, I have little time before the next meeting. May I join you?

The CHAIRMAN. Please do. We are delighted to have you.

STATEMENT OF J. ALLEN WAMPLER, ASSISTANT SECRETARY FOR FOSSIL ENERGY, DEPARTMENT OF ENERGY, ACCOMPANIED BY RICK FURIGA, DEPUTY ASSISTANT SECRETARY, PETROLEUM RESERVES; AND GUY CARUSO, DIRECTOR, ENERGY EMERGENCY POLICY AND EVALUATION

Mr. WAMPLER. At the table with me this morning, to my right, I have Mr. Furiga, who is Deputy Assistant Secretary for Petroleum Reserves.

To my left, Mr. Guy Caruso, who is the Director of Energy Emergency Policy and Evaluation of the Department's Office of Energy Emergencies.

I will spend only a few minutes summarizing my testimony.

As you can see in my prepared statement, we have included a description of the Administration's new divestiture proposal for the Naval Petroleum Reserves.

This year, as you are aware, we have proposed a direct linkage between our sales approach and the continued rapid fill of the Strategic Petroleum Reserve.

The buyer of the Naval Petroleum Reserves would be required to provide a cash payment of $1 billion along with a commitment to provide 50,000 barrels per day of specification grade crude oil for the SPR.

That, coupled with the Department's acquisition of 22,000 barrels per day in 1990 and 25,000 barrels per day thereafter would give the Nation a full 750 million barrel Strategic Petroleum Reserve by early 1996.

Another key aspect of our divestiture proposal would be the creation of the Defense Petroleum Inventory.

This 10 million barrel stockpile would be physically located at the SPR complex, but would be available solely to meet the demands of the Department of Defense.

Oil to be stockpiled in the DPI would also be acquired from the purchaser of the Naval Petroleum Reserves.

As I have indicated in my formal statement, Mr. Chairman, the DPI would have an emergency drawdown rate well in excess of the rate of crude oil that could be allocated to the Defense Department from the declining production of the Elk Hills Reserve.

Therefore, we believe our divestiture proposal and its linkage to both the continued fill of SPR and the creation of a Defense Petroleum Inventory offers us a sensible way to improve the readiness of both the civilian and defense sectors of our economy.

The Strategic Petroleum Reserve continues to be filled at the most rapid pace possible within budget limitations. We currently have 567 million barrels of crude oil in storage, and our annual fill rate has to date averaged 63,721 barrels per day.

My formal statement contains details of our drawdown and distribution capabilities. We can currently withdraw oil from the SPR at a rate of 3.5 million barrels per day.

Our distribution enhancements program, the effort that we have underway to ensure that oil can be moved to market as fast as we can extract it from the caverns, has now raised our distribution capability to 3.2 million barrels per day.

As we have stated in the past, we believe the most responsive approach to distribution of SPR crude oil at the time of import disruption would be by competitive sale. As my formal statement indicates, Mr. Chairman, the Department supports an extension of Title 1 of EPCA for another five years.

At the present time we would not propose any additional legislative changes. However, there may be some merit in reexamining the existing authorities that govern the Presidential order to draw down the Reserve.

We would prefer to examine those various options more thoroughly with other elements of the Administration before offering any specific recommendation.

The committee has inquired about the Department's position on the ultimate size of the Reserve. As you are aware, Mr. Chairman, on April 6th, we submitted a report to Congress describing the steps necessary to take us to a one billion barrel reserve. The study provided technical descriptions and cost estimates for this expansion.

As the report indicated, the costs of enlarging the Strategic Petroleum Reserve are considerable—at least $6 billion for the facilities and crude oil at today's prices.

Consequently, the Department will chair an interagency study group that will undertake a detailed policy analysis of the costs

and benefits of expanding the SPR. And we will have a policy recommendation to the Congress by the end of this year.

We have also addressed the issue of fill rate in the formal statement. S. 694 would require that the SPR be filled at 75,000 barrels per day until one billion barrels of oil are in storage.

We recognize the concern of the committee that multi-year fill of SPR be assured and be maintained at a reasonably high rate. We concur with that objective and support a fill rate as high as the budget will allow.

However, increasing the fill rate solely through direct appropriations undoubtedly will be hampered by the need for budgetary restraint.

We believe that the alternative proposed by the Department—namely the guaranteed receipt of 50,000 barrels per day of specification-grade crude from the buyer of the Elk Hills Naval Petroleum Reserve—would relieve some of the annual budgetary pressures.

Together with the approximately 25,000 barrels per day purchased with appropriated funds, our divestiture approach would assure a stable fill of 75,000 barrels per day until the 750 million barrel goal is reached.

Because you and members of the committee have expressed interest in these issues, I have included sections in my testimony on the export of SPR crude oil, domestic refining capability and product imports, and the issue of regional reserves.

I will not take up the committee's time by summarizing those points now, Mr. Chairman, but we would be pleased to discuss them, if you have any questions or comments.

The last element of my testimony deals with alternative financing. This has been a major focus of analysis both by Congress and the Administration.

We have researched numerous proposals, both from within government and from the outside. Much of this research has been made available to the General Accounting Office.

After examining all of these analyses, we continue to believe that the most attractive way to fill SPR and, at the same time, ease the burden on the Federal deficit, is to use the sale of the Naval Petroleum Reserves as a way of acquiring oil for the SPR.

Properly structured, this approach could provide a stable, guaranteed source of crude for the SPR.

The value of this approach is even greater when you consider that it offers a built-in hedge for the Government if oil prices should rise in the future.

Mr. Chairman, this concludes my opening statement. I will be pleased to attempt to answer any questions you may have.

[The prepared statement of Mr. Wampler follows:]

Statement of
J. Allen Wampler
Assistant Secretary for Fossil Energy
U.S. Department of Energy
to the
Senate Committee on Energy and Natural Resources
May 4, 1989

It is my pleasure to appear before you today regarding the current status and outlook for the Strategic Petroleum Reserve (SPR). I will provide recent information and considerations regarding the fill rate and drawdown capability, reserve readiness, financing approaches and the size of our nation's Strategic Petroleum Reserve, and will provide specific comments on the bill S.694.

Fiscal Year 1990 Oil Acquisition Strategy

Our budget and acquisition strategy for fiscal year 1990 and the future involves both the budget requests for the SPR and the Naval Petroleum and Oil Shale Reserves and a proposal to sell the Government's interest in Naval Petroleum Reserves (NPR) Numbered 1 (Elk Hills) and 3 (Teapot Dome) with the formal transfer of title at the end of fiscal year 1990.

President Bush, in his budget transmittal to Congress on February 9, 1989, reemphasized the Administration's commitment to "restoring a balance between public and private activities that can best be performed by private enterprise...." Previously, President Bush had stated that:

> *"The American solution for the '90s means renewing our emphasis on a limited Federal Government. It means eliminating governmental functions that overlap with each other or compete with the private sector."*

As the Administration's revised budget proposal stated, divesting the two commercial oil fields will "accelerate the filling of the Strategic Petroleum Reserve at lower cost, increasing energy security and strengthening national security." The proposed legislation to sell NPR-1 and 3 is designed to combat the budget deficit, fill the SPR more expeditiously, and enhance the emergency energy reserves of the Department of Defense. The key provisions of this legislation are:

(1) The Secretary of Energy would be authorized to sell NPR-3 (Teapot Dome) and the Government's interest in NPR-1 (Elk Hills).

(2) The sale of Elk Hills would be made subject to an upfront cash payment by the buyer(s) of $1 billion or more.

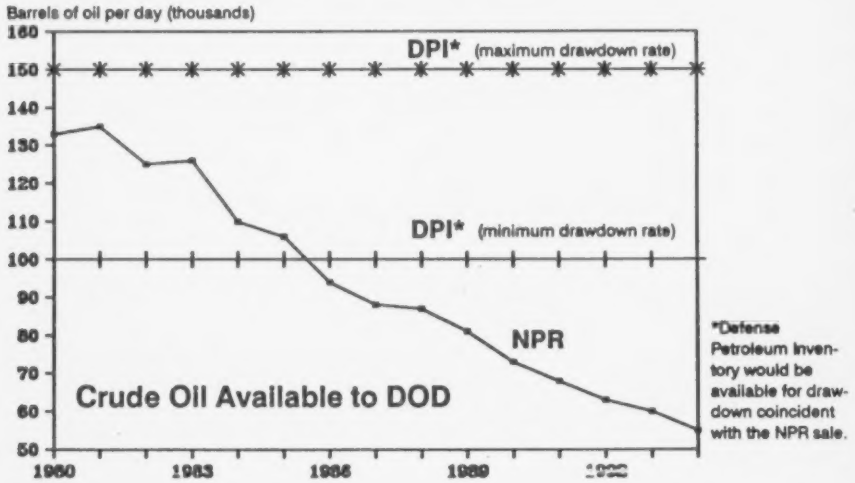
(3) The Elk Hills buyer(s) would be committed to delivering specification oil to the SPR at an average rate of 50,000 barrels a day beginning in fiscal year 1990 and continuing through fiscal year 1995, for a total of 109.5 million barrels.

(4) The Elk Hills buyer(s) would also be committed to providing 10 million barrels of oil for a Defense Petroleum Inventory during fiscal years 1991 and 1992. This inventory would have a significantly higher drawdown and distribution rate than the Naval Petroleum Reserves (as shown in the following chart). It would be located with the SPR and managed by the Petroleum Reserves Office, but would be available at the request of the Secretary of Defense.

In our view, this financing and acquisition approach will provide a realistic way to help meet deficit reduction targets, improve our civilian and defense energy emergency preparedness, and assure attaining 750 million barrels of oil in storage at the SPR in early 1996.

By exchanging, in effect, an aging oil field with declining production for upfront cash and the guarantee of oil deliveries to a more strategically located storage complex, our divestiture proposal will allow the government to enhance its strategic energy readiness while removing it as an operator in a commercial oil and gas business enterprise.

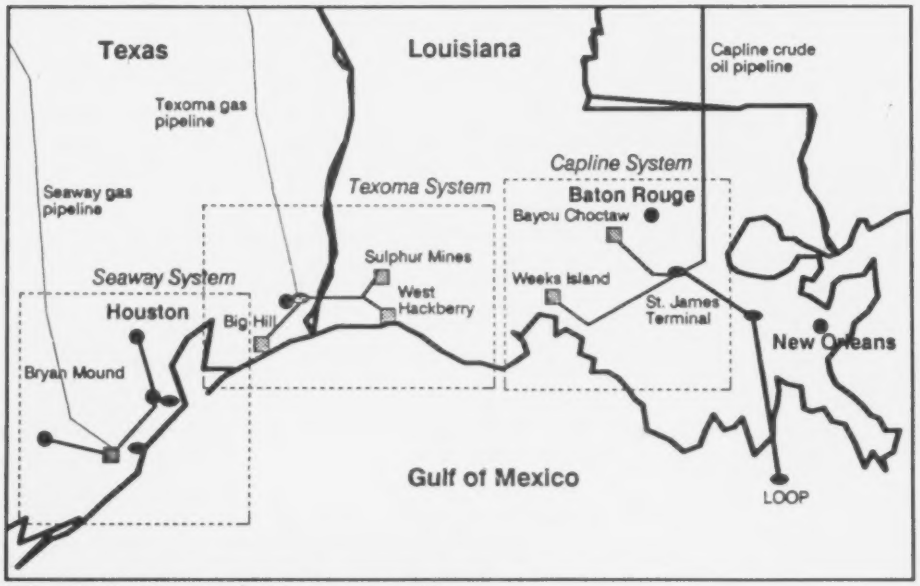
As the chart below shows, the DPI portion of the proposal would improve the military's ability to obtain crude oil supplies rapidly in the event of an emergency, and the benefits of that rapid access will become even more enhanced as production from the natural geologic formations of the Naval Petroleum Reserve declines in the future.



Status and Accomplishments

The SPR was authorized in 1975 by the Energy Policy and Conservation Act (EPCA), P.L. 94-163, as a response to the '73-'74 OPEC embargo. The authorization was extended in July 1985. The original authorization goal was an early fill to 150 million barrels within three years and a seven year target of 500 million barrels, with an ultimate fill goal of up to one billion barrels. The Executive Branch subsequently adopted a policy goal of 750 million barrels and provided Congress development plans for achieving that goal. The legislation containing the provisions authorizing the SPR expires on June 30, 1989.

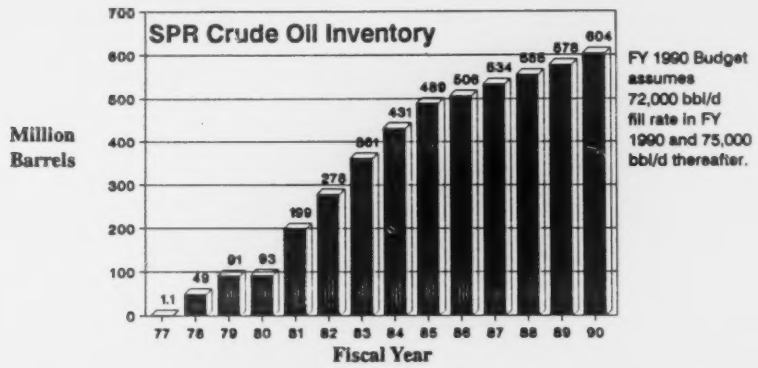
Over the last 12 years, the SPR has acquired and developed six sites with underground crude oil storage in salt domes along the coasts of Texas and Louisiana, and developed a Government-owned marine terminal on the Mississippi River at St. James, Louisiana. As the chart below shows, these storage sites are organized into three distribution systems and connected by DOE pipelines to commercial crude oil pipeline networks and marine terminal facilities for drawdown and distribution.



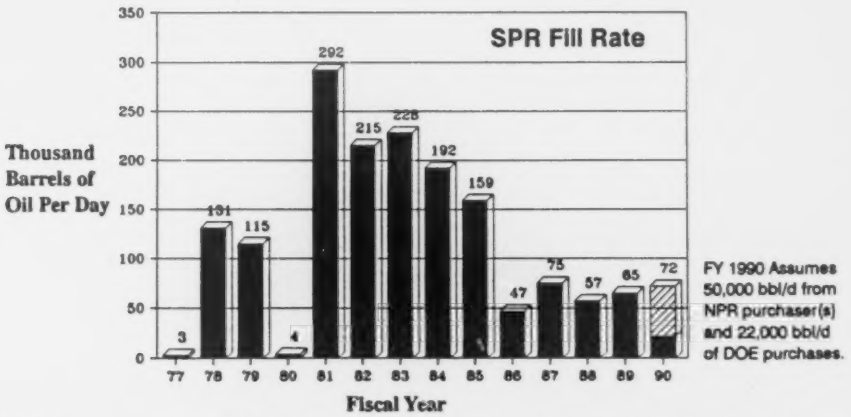
The U.S. Strategic Petroleum Reserve

All surface construction necessary to achieve 750 million barrels of crude oil in storage will be completed by the end of FY 1989. Development and fill of the Weeks Island and Sulphur Mines sites have been completed. Capacity development has been completed at the Bryan Mound and West Hackberry sites. Solution mining at the Big

Hill and Bayou Choctaw sites is continuing on schedule to achieve a full 750 million barrels of capacity by the end of FY 1991. Long range plans provide for relocation of the Sulphur Mines oil to Big Hill and decommissioning of the Sulphur Mines facility.



As of March 31, 1989, approximately 566 million barrels of oil were stored in the SPR. The average FY 1989 fill rate through March was 63,542 barrels per day. Based on our recent cost experience and the current level of oil prices, we are now projecting an average annual fill rate of about 65,000 barrels a day and a year-end inventory of approximately 578 million barrels. Oil purchases are currently being made from the Mexican state-owned oil company, Petroleos Mexicanos (PEMEX). The contract allows for changes to the volumetric lifting rate for the crude oil by mutual agreement. The price is set by formula and is changed daily to reflect the movement in spot market prices of Alaskan North Slope, West Texas sour and West Texas intermediate crude oils.



The Administration's FY 1990 budget proposes completion of a 750 million barrel Strategic Petroleum Reserve by 1996, acquired partly through the sale of the

Government's interests in NPR No. 1 (Elk Hills) and No. 3 (Teapot Dome). The FY 1990 budget submission assumed fill rates of 78,000 barrels a day in FY 1989, 72,000 barrels a day in FY 1990, and 75,000 barrels a day from FY 1991 through 1995, with completion of the inventory in early 1996.

Drawdown and Distribution Capability

The current SPR drawdown capability (i.e., the rate at which oil can be withdrawn from storage) is 3.5 million barrels a day. The on-going distribution enhancements program for increasing SPR distribution capability has, to date, created the capability to distribute 3.25 million barrels a day into the United States refining infrastructure for about four months and lesser amounts thereafter, with a sweet/sour crude oil mix that will enable most refiners to meet their desired product slate. Sale of SPR oil is to be made through a competitive sales process.

The six SPR sites are grouped into three distribution complexes – Seaway, Texoma and Capline – that serve both commercial pipeline and marine transport systems. Originally, each complex served a major interstate pipeline extending into the mid-section of the country. Market changes in the early 1980's forced the conversion of two of these pipelines to natural gas carriage, and they are no longer available for SPR use. To compensate for the loss of these pipelines, DOE has undertaken a major effort to enhance the SPR's distribution capability.

In the Seaway System, the distribution enhancement of Bryan Mound's drawdown capability is currently in progress toward a 1990 completion. The Bryan Mound to Texas City pipeline and marine distribution terminal modifications and contracts were completed in 1987. This project will increase the Seaway System's drawdown/distribution rate from 1.10 to 1.25 million barrels per day.

Distribution in the Texoma System, which groups West Hackberry, Sulphur Mines and Big Hill, is currently limited to the physical capability of the Sun Terminal facilities at Nederland, Texas. This limitation will be lessened with the addition of a distribution pipeline between West Hackberry and the Lake Charles refining area in 1989. DOE's marine distribution services procurement for Lake Charles was cancelled in 1988 because the offers received required construction of additional facilities in lieu of making existing facilities available for SPR drawdown and, therefore, greatly exceeded the project's budget. DOE plans a combined marine distribution services procurement for Lake Charles and Beaumont/Port Arthur in 1989. When complete, these enhancements will increase the drawdown/distribution rate for Texoma from 1.24 million barrels per day to 2.18 million barrels per day.

Distribution in the Capline System, which groups Bayou Choctaw and Weeks Island, is limited by the PADD II refiners' current reliance on domestic supplies and Canadian imports. As these supplies decline in the future, SPR Capline drawdown/distribution capability is projected to increase from 910,000 barrels per day to 1.07 million barrels per day.

The competitive sales process for distributing SPR crude oil, in conjunction with SPR drawdown readiness procedures, provides a capability to commence awarding contracts and releasing SPR oil approximately 15 days following the Department's issuance of a Notice of Sale. However, actual delivery this quickly, in an early stage of a disruption, would be subject to the oil purchasers' ability and willingness to readjust their supply and logistics plans to arrange commercial transportation. Most deliveries are expected to begin two weeks later.

Several concepts that could accelerate the release of oil to the market have been identified and remain under consideration. These include prequalification of bidders, contingent sales initiated before a Presidential determination of an energy emergency, and authority for the sale, prior to the President's emergency determination, of incoming cargoes destined for the SPR.

Comments on S.694

On April 4, 1989, S.694, *The Strategic Petroleum Reserve Amendments Act of 1989*, was introduced in the Senate. It provides for the extension of the authority in Title I of EPCA for a period of five years. In addition, it proposes new authorities and requirements concerning the SPR. The bill would require the Department of Energy to submit an SPR Plan amendment to prescribe the schedule and details for achieving a one billion barrel reserve, e.g., the implementing actions and timetable for adding 250 million barrels to the current 750-million barrel goal. The bill would reaffirm and establish that the fill rate for the SPR must be 75,000 barrels per day until the one billion barrels of oil is in storage. Finally, the bill would provide new authority to the Executive Branch that would permit the use of incoming SPR oil cargoes for emergency purposes prior to a drawdown decision.

Extension of EPCA

The Department supports an extension of the authority contained in Title I of EPCA which expires on June 30, 1989. We recommend that the length of the extension be five years, until June 1994.

The Department does not propose any changes to the existing law, other than a time extension. Generally speaking, the Department believes that the use of current

Presidential authority and the existing Distribution Plan will allow us to meet the nation's needs in an energy emergency. There is some merit in reexamining the existing authorities for the use of the SPR to counter the impacts of potential energy supply disruptions, particularly in light of events following the recent Exxon Valdez accident, but before making specific recommendations, the Department prefers to examine various options more thoroughly and discuss any possible amendments within the Administration.

Ultimate Size of the SPR

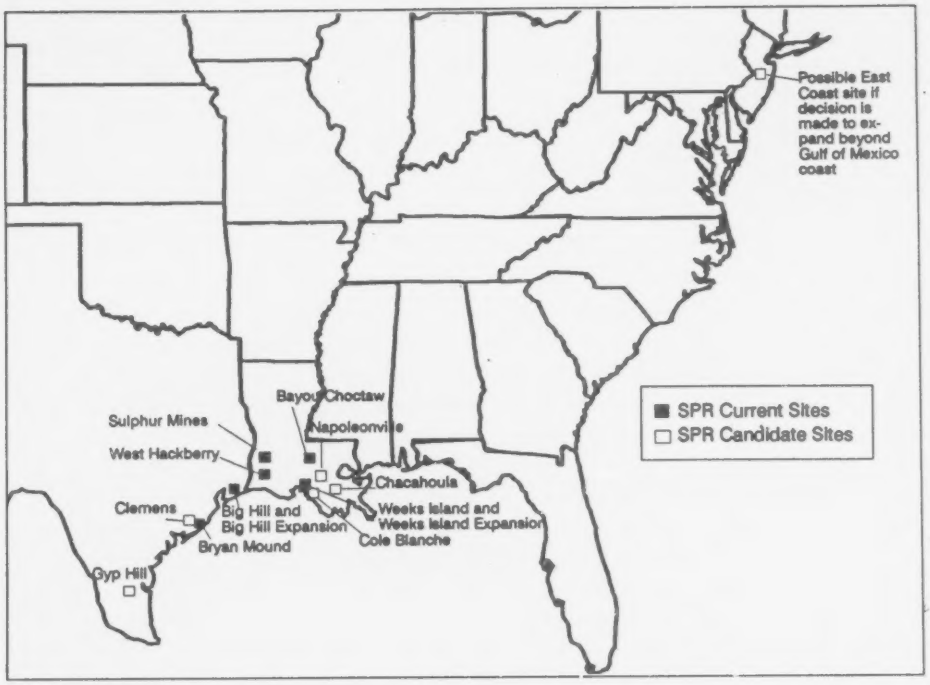
On April 6, 1989, the Department responded to a Congressional request to submit a study on possible steps to expand the SPR from its current goal of 750 million barrels to one billion barrels. The Department's "*Report to Congress on Expansion of the Strategic Petroleum Reserve to One Billion Barrels*" identifed candidate sites and provided preliminary technical descriptions and cost estimates.

As the report stated, expanding the SPR to one billion barrels would require substantial budgetary resources – more than $6 billion for major new storage and distribution facilities and crude oil at today's prices – and over ten years to complete. Prior to finalizing an Administration position on expanding the Reserve, DOE indicated in its transmittal to Congress that an interagency study group will undertake a detailed policy analysis of the costs and benefits of expanding the reserve. The Administration's position will be forwarded to Congress later this year.

The report indicated that, should a decision be made to enlarge the Reserve, the Gulf of Mexico coastal area will likely remain the preferred choice for new storage sites. Stockpiling crude oil in cavities created from underground salt deposits remains the key to low-cost, effective storage.

Expanding an existing Gulf coast site, for example, likely would cost $3.50 to $4.50 per barrel of storage capacity; developing a new Gulf coast site would cost $5.00 to $7.50 per barrel. By contrast, based on current knowledge, locating a new site where salt cavern storage was not possible could cost $8.80 to $10.50 per barrel if underground concrete tanks were used, and as much as $15 per barrel if aboveground steel tanks were required.

The DOE report also indicated that should a one-billion barrel Reserve be needed, sufficient sites exist along the Gulf coast to accommodate the additional crude oil. DOE screened 66 of the most suitable salt domes (selected from among the approximately 550 onshore and offshore salt domes known to exist in the Gulf coast region) and made a preliminary identification of seven sites as the best candidates, as shown by the map on the next page.



The Department believes that the interagency study, discussed above, should be completed and analyzed before a decision is made to amend the SPR plan as proposed by the legislation.

SPR Fill Rate

S.694 would require that the SPR be filled at 75,000 barrels per day until one billion barrels of oil are in storage. Under current law, the SPR must be filled at an average rate of 75,000 barrels per day until 750 million barrels are in storage or production from the Naval Petroleum Reserve at Elk Hills must either be used for SPR fill or shut in. The Fiscal Year 1989 Appropriations Act waived this requirement for that fiscal year, due to budget constraints associated with deficit reduction.

We recognize the concern of the authorizing committee that multi-year fill of the SPR be assured and at a reasonably high rate. The Department concurs with that objective and supports a fill rate as high as the budget will allow. However, increasing the fill rate solely through direct appropriations undoubtedly will be hampered by the need for budgetary restraint. As an alternative, the Department has proposed that fill be ac-

complished through guaranteed receipt of 50,000 barrels per day of specification-grade crude oil from the buyer(s) of the Elk Hills Naval Petroleum Reserve. Together with oil purchased with appropriated funds, our divestiture approach would assure a stable fill of 75,000 barrels per day until the SPR inventory reaches 750 million barrels.

Predrawdown Diversion of Oil

The predrawdown diversion of incoming cargoes destined for the SPR could help to accelerate the release of oil to the market. This option remains under active consideration by the Department. Under existing law, any quantity destined for the SPR before a drawdown decision is made could either be placed in storage to become part of the oil sold at drawdown, or contract deliveries could be terminated, thereby releasing some of the oil into the marketplace sooner than could be accomplished by the normal SPR drawdown and sales process. Legislation would be necessary to permit the incoming oil to be sold in the U.S. market in advance of a drawdown decision. With regard to the particular provision on this subject in S.694, I note that it requires a finding that the world price of crude oil *already has increased* substantially due to a potential supply interruption.

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This concludes my comments on S.694. I would also like to comment on some related issues of interest to the Committee.

Export of SPR Crude Oil

Questions have been raised recently about the possible export of SPR crude oil. In certain limited instances, exports of SPR crude oil could be desirable, depending upon the nature of the disruption and the ability of domestic refiners to make up any product import quantities that are interrupted.

For example, it might be desirable to export SPR crude if such exports are combined with a requirement for delivery of roughly equal volumes of refined products into the domestic market. SPR crude thus would be used to augment domestic refining capacity. Permitting distributed SPR crude oil to be refined at certain foreign facilities and returned on an approximately equivalent exchange basis to the U.S. or directly exchanging the crude oil for refined products are both alternatives that could add to emergency capabilities and which should be carefully examined.

Regarding the current authorities to export distributed SPR oil, the SPR contains crude oils that are subject to different export control laws (e.g., imports, Naval Petroleum Reserve and Alaska North Slope crude oils). These crudes have not been segregated in storage in a manner that corresponds to the multiple statutes governing

their export. These various types of oil are likely to become even more commingled in a drawdown.

There are no existing SPR-specific statutory or regulatory export authorities which provide for the export of SPR crude oil. The Department of Commerce regulations possibly could be amended to allow the export of crude oil that had been imported to fill the SPR. Waiver of export controls on all of the domestically produced oil in the SPR (if such oil could be identified), however, could require legislation.

There are exceptions, however. Existing law provides that all legal restrictions on exporting crude oil can be waived if such exports are pursuant to the emergency sharing system of the International Energy Program, or are required to fulfill U.S. obligations under the U.S.-Israeli supply agreement.

Domestic Refining Capability and Product Imports

Utilization rates for U.S. refinery distillation units have been climbing for several years. In 1986, they reached an average of 82.9%; in 1987, they edged upwards to 83.0% and to 84.4% in 1988. (These are, however, overall averages; the utilization rates and conditions for specific products, locations and the seasons of the year differ.) Absent the construction of new refining capacity, and considering the decline in domestic crude oil production while demand increases, future supply disruptions could affect specific product availability more significantly than in the past. The upward growth trend in product imports is expected to continue at least through the late 1990s. In 1987, 15.4% of all product imports came from Arab OPEC nations, another 17.6% originated in other OPEC countries (principally Venezuela), and the remaining 67.0% came from a wide diversity of sources.

The world's major refining centers are expected to improve their ability to make similar products out of more varieties of crude, particularly the increasingly heavier crudes, as refining capacity becomes more sophisticated. World refining and product markets also are much more interconnected than in the mid-1970s, with the present diversity in product supply expected to continue, however crude oil production likely will become more concentrated in the Middle East, and producing countries are expected to continue their move into downstream refining and marketing activities.

The Department's April 1989, "*Report to Congress on Expanding the Strategic Petroleum Reserve to One Billion Barrels*" examined the practicality of storing products as part of a possible expansion of the SPR in the future. Its findings continue to indicate that crude oil storage is simpler and less costly than product storage. The analysis did not identify any compelling reason for product storage since crude oil storage appears to deal effectively with potential supply disruption scenarios. The Department

does believe that sound emergency preparedness policies require storing the proper mix of crudes in the SPR to ensure both flexibility and compatibility with the widest variety of U.S. refinery needs, and giving continued attention to the adequacy of the ultimate SPR size.

Regional Reserves

Members of Congress recently have introduced two identical bills, S.668 and H.R. 1418, both dealing with regional reserves. Each provides for a regional petroleum reserve beginning in FY 1990 for each region described in subsection (a) of EPCA Section 157 which contains a state which imports more than 50 percent of its demand for crude oil or petroleum products and into which the oil or product is transported exclusively by means other than pipeline, rail or highway. The legislation requires that the reserves be located in each state which meets this criteria.

The proposed bills present some problems of interpretation. The reference to a region described in Section 157(a) could be read as applying only to regions which meet the 20 percent import test set out in the Section. Under that interpretation, Hawaii would not qualify, but 14 states in four East Coast regions might qualify if they satisfied the exclusivity test. We surmise that the intent of the bills is to compel SPR oil storage in Hawaii, but the bill does not seem clearly drafted to accomplish that result. Hawaii would appear to meet the bill's other criteria, at least with regard to its crude oil imports. Assuming that these other criteria are meant to apply separately to crude oil and each refined product, a preliminary review of available data suggests that Puerto Rico and the Virgin Islands would qualify for crude oil storage and does not rule out the possibility that some states on the East Coast also may satisfy these other criteria.

In any event, the Department does not support passage of this proposal. DOE's analyses since 1975, including the recently released "*Report to the Congress on the Expansion of the Strategic Petroleum Reserve to One Billion Barrels,*" indicate that the SPR's centralized Gulf Coast storage can provide cost-effective protection for all regions and non-contiguous areas in all but the most severe circumstances.

Establishment of Government-funded and/or Government-owned regional reserves as envisioned in H.R. 1418 and S.668 would be a more expensive and inefficient means of supply cutoff protection. Petroleum storage in underground salt dome caverns is an economical and secure means for storing crude oil. In North America, salt domes are found almost exclusively in the Gulf Coast region, an area whose attractiveness as an emergency oil storage location is increased by its close promixity to refining centers and oil distribution terminals.

It is possible that, depending on the interpretation of the legislation, some states could store more than one product in addition to or instead of crude oil. Long-term petroleum product storage has several disadvantages relative to crude oil. These include the loss of flexibility to respond to changing product demands, the need to rotate stocks to avoid product deterioration, and the added cost of segregated product storage and distribution capabilities. The Department, however, will continue to monitor U.S. refining trends and U.S. product vulnerabilities and, if necessary, will advise the Congress on the need for future policy changes.

Alternative Financing

We understand that questions have been raised regarding possible alternatives to financing the continued fill of the SPR through annual appropriations.

The Department has given a considerable amount of attention to alternative financing and oil acquisition, including leasing proposals, generated from within the Department and by consultants and corporations, and has provided substantial data to the General Accounting Office for its recent review of this subject.

There seems to be no painless way to invest in an expensive oil inventory when there are competing national needs, policies and a significant budget deficit problem. Divestiture of the Naval Petroleum Reserves as an alternative acquisition method proposed by the Administration, with payment in the form of: 1) oil to expedite SPR fill, 2) oil to strengthen emergency energy deliverability to defense, and 3) upfront cash, is an attractive option if Congress agrees to the divestiture. Absent Congressional action to authorize divestiture, the resulting delay in SPR fill could expose the Nation to more risk from rising imports than if the proposal were accepted, or to higher costs of Strategic Petroleum Reserve fill, if oil is purchased later and today's prices, which may turn out to be lower than future prices, are lost to us.

In general, there appear to be two common features of the competing alternative financing proposals. First, most people recognize that the purchase of oil for the SPR is not consumption or a depreciating investment. Over the long term, it is likely to be an appreciating inventory investment – particularly at the time of a disruption. Second, alternative arrangements for purchasing oil for the SPR inventory often imply both a current cost and a future outlay associated with the financing cost. In general, the proposals appear to imply that net present value of the future oil appreciation to be foregone by the Government is greater than the value of the cost reduction offered to offset private business risk and provide business profits. We are reviewing the recent General Accounting Office report to identify possible opportunities that might provide greater benefits to the Government, but we are finding that the NPR divestiture proposal is superior as an effective means to assure multiyear fill of the SPR.

Opportunities

I would like to close by itemizing some opportunities before us. We can:

- Continue fill of the SPR at the fastest possible rate by expeditiously acting on the Administration's divestiture proposal that provides for extra fill while recognizing budget constraints;
- Continue to develop storage capacity to the planned level of 750 million barrels;
- Continue the on-going distribution enhancement program to achieve a distibution capability of 4.5 million barrels a day;
- Continue to train and exercise personnel, systems and procedures for drawing down the SPR to assure mission readiness;
- Continue a public awareness program to acquaint industry and the public with the mission of the SPR and how it will function at the time of an energy emergency and the economic benefits provided; and finally
- Maintain efficient response plans for flexible use of the reserve, if and when required.

This completes my formal statement, Mr. Chairman.

The CHAIRMAN. Mr. Wampler, while Senator Matsunaga is here, he has just testified that Hawaii is willing to propose to furnish its own storage for crude oil. Have you been advised of this and if so, would it be cost-effective to do so?

Mr. WAMPLER. To my knowledge, we have not been advised of this. Our cost calculation, as I recall, did contain a component for new tanks, and I think we came out at about $15 a barrel.

I suspect that the furnishing of tanks would make a fairly substantial difference in cost, and I would certainly like to take a look at this.

The CHAIRMAN. $15 a barrel, of course, compares to what, $3.50-$5 range on the Gulf Coast?

Mr. WAMPLER. Yes.

The CHAIRMAN. There I think you have your answer. If Hawaii can, in fact, furnish the tanks for a storage facility, then I would think we could furnish the oil, would you not, if the storage facilities meet or pass muster under the environmental laws and all the other laws.

Mr. WAMPLER. We certainly would take a look at that, Mr. Chairman. I think we would look at it from the standpoint of cost-effectiveness.

Number one, we would look at it from the standpoint of security. We have a rather extensive security system around the Reserves, as you are aware. We would also look at it from the standpoint of whether it would be cost-effective to do it. We still maintain there are ways that we can supply oil to Hawaii in a reasonable amount of time.

The CHAIRMAN. That was going to be my next question. Just in case Hawaii's resolve to build, furnish, and maintain these tanks up to the standards that we would expect does not materialize, how alternatively could we provide for the security of Hawaii?

Mr. WAMPLER. At the present time we are certain that we can get oil from the Gulf Coast storage to Hawaii in about 20 days.

There are ways that we are currently evaluating as we evaluate some of the issues we think need to be looked at for EPCA extension.

For example, if we all decided the authority to divert SPR cargoes is a good idea—and we are not finding a lot of objection at this point in time to that—there would be a way to trade and divert cargoes that are on the high seas to Hawaii and that could accomplish the objective in a much shorter time frame.

I think we also need to look at it, and we have not looked at our normal drawdown process to make sure that regions like Hawaii can get the oil as rapidly as possible.

The CHAIRMAN. Would you undertake to give us a plan for Hawaii assuming that they do not have the storage facilities because, frankly, while I know Senator Matsunaga is as good as gold, I do not know whether the state of Hawaii might get a little cold feet when they look at the cost of providing these facilities.

So, in case they do not, would you furnish us a plan whereby Hawaii can be assured of being taken care of, and then we can after we receive that, we can analyze it with Senator Matsunaga and Senator Inouye and be sure that we have their concerns adequately covered.

Mr. WAMPLER. Certainly, Mr. Chairman. We will be glad to work with you.

[The information follows:]

RESUPPLY OF HAWAII

In the event of a severe energy emergency involving a drawdown and distribution of the Strategic Petroleum Reserve (SPR), the Department of Energy plans to ensure distribution of sufficient crude oil to meet Hawaii's local needs through various available means.

The primary method, pursuant to the SPR Distribution Plan, would be by the Department's competitive sales process which is provided for in its Standard Sales Provisions for sale of SPR petroleum. Within this process, the Department would issue a solicitation for offers to purchase SPR oil no later than immediately following Presidential authorization to draw down the SPR. Offerors will be required to submit their bids within as little as 7 days indicating prices for the quantity and type of crude oil desired, as well as the transportation mode by which they will take delivery. Following receipt of the offers, it is anticipated that during the next 8 days the bids will be evaluated, successful offerors determined and advised, the SPR placed in readiness for drawdown and, provided the successful offerors submit their required financial payment and performance guarantees, initial sales contracts awarded. Once these contracts are awarded, oil deliveries could commence as soon as the purchasers arrange their necessary transportation for shipping the oil from the SPR U.S. Gulf distribution terminals to its destination. In the case of oil successfully purchased for Hawaii, the first marine shipment loaded could then reach that State in about 24 days, utilizing the Panama Canal.

Under the Distribution Plan, the Department could accelerate its SPR sales process, if required, by initiating the process in advance of a drawdown decision, but contingent upon such a decision. Under these circumstances, SPR oil deliveries could commence as soon as the drawdown decision is made, thus reducing the overall time from the date of decision to when the first delivery reaches Hawaii by as much as 15 days. To achieve even faster oil deliveries to Hawaii, an Hawaiian purchaser of SPR oil could exchange his cargo for a commercial cargo which, if located on the West Coast, could arrive at Hawaii in as little as 6 days.

Additionally, to assure that the Jones Act requirement for use of U.S.-flag vessels between U.S. ports does not delay the marine supply of Hawaii, the Department could seek a waiver of that requirement, on a blanket or an individual basis. Without prejudice to its right to request a blanket waiver, the Department has executed an agreement with the Customs Service and the Maritime Administration which provides for expediting the process for granting individual waivers to SPR oil purchasers for use of foreign vessels should U.S. vessels not be available.

In addition to the normal competitive sales process for SPR oil, the Department has other means associated with ongoing fill of the SPR to make crude oil available for distribution to Hawaiian refiners. At the time of an energy emergency, it is anticipated that there may still be crude oil supplies in transit for delivery to fill the SPR. In such an event, it would be possible for these supplies to be redirected for use in Hawaii through terminating the contracts and thus releasing the oil

to the market for Hawaiian refiner acquisition, physically diverting any cargoes which are in transit, or selling the cargoes at an intermediate transshipment point or SPR terminal prior to placement into storage.

Finally, in the event Hawaii's crude oil supply needs cannot be met under the basic competitive sales process or through diversion of oil destined for SPR storage purposes, the Secretary of Energy could invoke his discretionary authority under the SPR Distribution Plan to direct the sale of up to 10 percent of the quantity sold during a competitive sale for that specific purpose.

Senator MATSUNAGA. Mr. Chairman, if you will yield.

You will recall when I was a member of this committee, the Navy had surplus tanks from World War II, and they were willing to—because it would serve their purposes, too—they were willing to make accessible those tanks. That is what I was referring to, and I am hoping that the tanks are still available.

The CHAIRMAN. My recollection is those tanks did not meet environmental standards. Is that correct?

Mr. WAMPLER. I do not know without looking at this specifically. I would doubt that they would, but I will certainly check that for sure and get back to the committee on that issue.

[The information follows:]

NAVY PETROLEUM STORAGE IN HAWAII

According to the Navy Petroleum Office, the Department of the Navy owns and operates approximately 115 petroleum storage tanks in Hawaii. Sixty-one of these storage tanks are less than 1,000 barrels in size, and the remaining tanks range from 2,000 to 300,000 barrels as shown below.

Nominal Tank Size	Quantity	Construction	Status
300 MB	20	Underground/Steel lined	All in product service One in repair
150 MB	8	Aboveground Steel	All in product service
80 MB	3	Aboveground Steel	One in product service Two in repair
50 MB	8	Aboveground Steel	Four in product service Four abandoned - not currently suitable for storage
20 MB	1	Aboveground Steel	All in product service
13.5 MB	2	Aboveground Steel	Both abandoned - not currently suitable for storage
2-10 MB	12	Aboveground Steel	Seven in product service Five in product service, but scheduled to be dismantled and replaced next year

In summary, the Navy has only 6 storage tanks which are not currently in active product service. The total usable capacity of these tanks is less than 225,000 barrels. Further, these tanks would require extensive refurbishment in order to be technically and environmentally suitable for SPR crude oil storage.

Senator MATSUNAGA. And I will do my own checking, too.

The CHAIRMAN. We want to work with you, Senator Matsunaga, on Hawaii's concerns because we know they are real concerns.

And it seems to me if we cannot store oil in Hawaii—maybe we can, maybe we cannot—but if we cannot, then we ought to at least build into the law adequate protections so we know how you are going to be taken care of and do not do like in the Alaskan oil spill and let the oil get on the water and then figure out how we are going to get it off.

We need to have plans in advance, and we will work with you to do that.

Senator MATSUNAGA. Thank you very much. I certainly appreciate your special attention to Hawaii.

The CHAIRMAN. Now, Secretary Wampler, you procured a study by ICF Corporation dated November 1988 on the size of SPR and at that time they stated that if the SPR is to be expanded to 1 billion barrels in the 1990s, then the expansion must be approved and funds must be appropriated now.

In other words, they are talking about the need to proceed with expedition on that study. And it concluded also, from a cost benefit standpoint, we should indeed expand the SPR to 1 billion barrels, is that correct?

Mr. WAMPLER. That is correct, Mr. Chairman.

The CHAIRMAN. And yet in your statement you talk about the administration will forward its position to Congress later this year. And I understand you told the House committee that it might not be until the end of next year.

Now, in view of this advice and this study that says it ought to be a billion barrels and it ought to be done now, why the delay?

Mr. WAMPLER. I can assure you, Mr. Chairman, it is not one of those issues that we are going to study to death. I think there is a very legitimate reason that we need the time to come to grips with this issue.

The study that we had ICF do was a preliminary study. We need to address some other very specific questions.

For example, we need to take a harder look at what our projected sources of supply are in the out years. That is where we are expecting to get our imports from. That has a great deal to do with security of supply and those kinds of things.

We also need some time to take a look at questions that I am sure the committee has on some of these issues. I know we have studied the regional reserves concepts; we have studied all these other questions that have come down.

I think we do need the time.

We are planning on bringing together a high level group that includes the State Department, the National Security Council, the CIA, and the Office of Management and Budget. It is going to be a fairly large interagency study.

And I think, once the results of that study are made known to the committee, we ought to be satisfied that we have looked at all the data and made a decision in a very logical way.

The CHAIRMAN. From our own part, I think the decision ought to be made now. When I say now, I mean sometime in the next 30 days. And I would hope that the committee would agree with me.

You know, we have been studying this thing. When did "Scoop" Jackson first have the bill? 1974.

It does not take a genius to figure out where we are going. Consumption is going up. Production is going down.

As you can see from our chart over there, those are the number of days that we are protected by, and even under the highest assumptions, we are only staying even—no, we are going down a bit, even under the highest assumption, the base case, we are going down a number of days we are protected by, and in the low case, we are going way down. I mean, we ought to be putting oil in that strategic petroleum reserve now.

And I believe virtually everybody on the committee agrees with that. I will let them all speak for themselves, but the question is, it seems to me, not how much—I think we want a billion barrels.

The question is what is the cost, what are the means of financing? Is the government going to own it? Are we going to have leased facilities or whatever?

Now, frankly my own view is that we ought to put this thing off budget as we did before.

It seems to me that the Stockmanesque view that everything goes on budget has been clearly rejected by this administration, and we are putting our FSLIC off budget, we are putting the postal subsidies, $2.1 million off budget, all kinds of other smoke and mirror things in this budget which you may or may not like—I happen not to like it.

But it is very clear that this administration has rejected that purity, that ideological view that says everything goes on budget.

Now, of all things to go off budget, it seems to me that the strategic petroleum reserve ought to because you are not spending the money. You are just simply converting it from one form of asset to another.

What is your view of that? What would the administration do if we proposed legislation to just go directly off budget?

Mr. WAMPLER. I am not sure I can really answer that. I certainly see your point.

Instead of doing that, I think that there has just been very recently some new ideas and possible new alternative financing methods that we are looking at that might bear some fruit. I think we have to look at it from the standpoint of whether Congress will approve the divestiture this year of the Naval Petroleum Reserve, which makes the problem much less onerous.

If that does not happen, it is very obvious we have a problem in terms of budgetary authority and outlays to fill the Strategic Petroleum Reserve, and we are going to have to look at alternative methods to do that.

I think the thickest file cabinet at the Department of Energy is the one that is filled with proposals for alternative financing, and I think perhaps we have overlooked some of the simpler forms of alternative financing, leasing and those sorts of things, in our vigor and zeal to look at some incredibly complicated methods.

I think we have to take a fresh look at those in the event that Congress does not approve the divestiture of NPR. We still think that investing in SPR is the least onerous way to——

The CHAIRMAN. Would private industry or would DOE be able to provide, build facilities in the cheapest way?

Mr. WAMPLER. I do not know. That is an answer I would like to have. If you take conventional wisdom on many other things, you would have to assume that probably the private sector could. That is something I would certainly like to see numbers on and investigate.

And if there is a way that the private sector can build facilities that can store the oil with integrity, with security at a lower cost and the President still has control of the oil at the time of the drawdown, I think it is something we have to look at very seriously.

The CHAIRMAN. It seems to me there are a couple of choices here. One is just to go off budget in which event, of course, the cost of building the facilities would have to go on budget. But the cost of the oil would be off budget, which is the way we did it before. And that way we got, it seems to me, a little over 300,000 barrels a day, at one time, filled.

Another way to do it would be to have private industry build the facilities, in effect lease the oil for a determined time to the Department of Energy so that for a period of time, say, ten years, you would be able to have first claim on that oil, to be able to purchase it, in effect, at the then-market price. But you would pay the interest cost of the oil put in plus the interest on the facilities themselves during that period of time.

I would think that would be a very good—I am surprised you do not have some of these investment houses that are not combining with the private industry to give you proposals on that today.

I think you need to turn up your time schedule to days instead of months and years in which you give us an answer because if I know this committee, we are going to move and move quickly. And so you can either be a part of the answer or we are going to decide for you, and I hope you will do that quickly.

I have a lot of other questions some of which I will submit in writing, but I see a ranking minority member who has been such a leader in SPR, and I know he wants to ask some questions and give some answers to my questions.

Senator McClure.

Senator MCCLURE. May I defer to Senator Nickles?

Senator NICKLES. Thank you. I am looking at your chart on page 4. How much money have we invested in the 566 million barrels that we have today?

Mr. WAMPLER. It is around $20 billion.

Senator NICKLES. What would the average cost per barrel be?

Mr. WAMPLER. Around $28 per barrel.

Senator NICKLES. I am looking at the chart, the bottom chart.

Correct me if I am wrong, but it looks to have a direct relation, the higher the price of oil, the higher our fill rate, and the lower the price of oil, the lower the fill rate.

It is almost funny, but in 1986 we had the lowest oil prices that we have seen in years. Imported oil was down to below $10 and we had the lowest fill rate of any year except 1980, but 1981, 1982, and 1983 we had the high oil prices, and we were filling like crazy.

We have had some low oil prices, and the fill rate is way down.

It really does not seem to make a lot of sense. In other words, we have lost of that oil, how many billions of dollars did you say?

Mr. WAMPLER. Around $20 billion.

Senator NICKLES. The present value of that oil would be about $11 billion. If you were selling that oil today at $20—let us say you have got 600 million barrels. At $20, that is $12 billion.

If you were selling it today, 600 million barrels at $20 a barrel is $12 billion.

So, we have been investing—I say you, but we have been investing a lot of money in SPR, but right now if you were to sell it, the taxpayers would be losing their shirts.

Mr. WAMPLER. I thank you, Senator, for not totally blaming me for the purchases in 1981 and 1982.

I think the point we have to make is we tried to fill the Strategic Petroleum Reserve when we had the money, with what we had, irrespective of what the price was at the time of the maximum fill rate.

I think you have to look at the Strategic Petroleum Reserve in another way. The greatest value of the Strategic Petroleum Reserve, in our opinion, is that it is a deterrent; it is an insurance policy, if you will.

You are paying a premium on that. It is not an unreasonable thing to do.

I think we have tried to take advantage of low price times for deliveries, and to get the maximum amount of oil that we could in the Reserve for the minimum dollars.

But you can recall some of those extremely high crude prices back in those years.

Senator NICKLES. Would you do me a favor and give me the amount of dollars—supply this—but the amount of dollars spent in each one of these years because in 1985 we had $18 oil and in 1986 we had single digit, $11, $12, $13 oil, and it really makes no sense to go from 159,000 barrels per day to 47.

[The information follows:]

ANNUAL COSTS FOR OIL

The estimated annual costs for oil to fill the Strategic Petroleum Reserve through Fiscal Year 1988 are as follows:

Fiscal year:	*Cost in millions*
1977	$16
1978	598
1979	670
1980	56
1981	3,924
1982	2,687
1983	2,445
1984	2,162
1985	1,698
1986	300
1987	504
1988	336

Senator NICKLES. I have been on this committee and Senator Bradley and others, Senators Johnston and McClure, for years, and I know we have wrestled with this budget problem as well. It really does not seem to make much sense the way that that has followed. It looks to me like we have lost our shirts as taxpayers.

I question the deterrent part. So, Senator Johnnston, I am not on board yet for the billion barrels. Maybe I will be. I understand the insurance necessity of the problem. I understand probably as well as anybody the growing situation with reliance on imports.

Let me ask another question. If the shortage was triggered under the international energy agreement, the worldwide shortage, would we end up exporting SPR oil?

Mr. WAMPLER. We could have some obligations under the IEA agreement. If so, it probably would not be in the export of oil. Probably the private sector would supply the oil and we would replace the stocks in this country. That would be the more likely scenario.

Senator NICKLES. That scenario basically would mean instead of us importing oil, we would not be able to import as much. We would have to divert that oil elsewhere, and we would start using SPR oil to fill what we were importing. So, the net result would be the same.

Mr. WAMPLER. That is correct.

Senator NICKLES. And so you will be aware of it, and I have raised it with this committee a couple of times before, but I have some problems with that.

I think we have some very serious obligations that have not been triggered yet, thank goodness, but could be very expensive.

We are going to be exporting, quote, some of our SPR oil in this Senator's opinion that we have invested—you mentioned $28.

But I think if you add the storage costs, et cetera, that would probably be much higher than that.

So, I bring that to your attention. I do not think—if Senator Johnston, if you want to call just strictly as asset—I am not sure it has been managed that way or it would be a very significant loser for the taxpayers from that vantage point.

Let me ask you one other question. The capacity, what about private capacity? You have all the major companies and so on, they have storage capacity to some extent? What size do they have? How much private capacity is out there? And I am not talking about long-term permanent storage capacity. But they use in the normal process of operations—do you have any idea on that?

Mr. WAMPLER. About 30 days of stocks. That combined with the 89 days or 90 days that we have now gives us much in excess of our IEA commitment. 120 days is what we have with private and government stocks together.

Senator NICKLES. I read in your statement the prices that we are paying for oil—we are buying all the oil for SPR right now from PEMEX, is that correct?

Mr. WAMPLER. That is correct.

Senator NICKLES. What prices are we paying for that oil?

Mr. WAMPLER. The prices in April for the PEMEX oil were $20.26 landed. Now, that compares with West Texas sour at that time of $20.79, so it was actually about 53 cents cheaper than West Texas sour.

Senator NICKLES. For the month of March?

Mr. WAMPLER. For the month of April.

Senator NICKLES. Are you really right on target with the posted prices, because we had a period of about, I think, three or four

weeks that we were above $20. We are not—are we below $20 today?

Mr. WAMPLER. It is West Texas sour.

Senator NICKLES. But you stay pretty close on target to that, because those prices dropped a dollar just this past week.

Mr. WAMPLER. We stayed very close on target. In fact, we can furnish you with a history of the times over the last couple or three years that we bought what the formula price was.

And there has been a little bit of misconception out there that we have been paying too much for this oil. But I can assure you, that is not the case. It generally averages less than West Texas sour.

[The information follows:]

STRATEGIC PETROLEUM RESERVE CRUDE OIL PRICES

The (attached) average prices paid per barrel by the SPR for crude oil delivered to SPR facilities are presented by quarter for the most recent three calendar years and the first quarter of 1989. These costs include costs for transportation but exclude costs for customs duties, Superfund taxes, terminal services and administration. Most of these quarterly average costs represent purchases from Petroleos Mexicanos (PEMEX), although some domestic oil purchases and deliveries from the Naval Petroluem Reserve at Elk Hills are included in 1986 and 1987.

The SPR quarterly average costs per barrel are compared to quarterly average spot market quotes for West Texas Sour, a widely traded domestic crude very similar in quality to Mexican Isthmus purchased from PEMEX. The quarterly averages for West Texas Sour were obtained from daily spot market quotes reported in Platt's Oilgram, and include a representative pipeline delivery charge.

SPR QUARTERLY AVERAGE PRICES PAID VS. WEST TEXAS SOUR QUARTERLY AVERAGE SPOT QUOTES

[Dollars per barrel]

Quarter	SPR prices	West Texas sour quotes
First quarter calendar year 1986	17.26	16.27
Second quarter calendar year 1986	13.49	13.55
Third quarter calendar year 1986	13.25	13.28
Fourth quarter calendar year 1986	14.68	14.75
First quarter calendar year 1987	17.80	18.08
Second quarter calendar year 1987	19.17	19.58
Third quarter calendar year 1987	19.78	20.06
Fourth quarter calendar year 1987	17.27	17.89
First quarter calendar year 1988	15.53	15.82
Second quarter calendar year 1988	15.99	16.42
Third quarter calendar year 1988	13.94	14.63
Fourth quarter calendar year 1988	12.24	13.62
First quarter calendar year 1989	16.90	17.64

Senator NICKLES. Some people have advocated that we would mandate this SPR purchase as Tripler Oil. I have not been one of those. I do not see that as making an economic argument. How would you answer that question?

Mr. WAMPLER. I guess I would answer the question in the words of the Stripper Association when they told us that they did not think it was a workable solution. They did not think there was a way to do it.

I do not think it really gives us a viable answer because the Strategic Petroleum Reserve was designed for tanker shipments. We

have no facilities to unload tanker trucks, and we cannot see a way to make it work.

We have looked at the issue two or three years in a row to try to make it work.

Senator NICKLES. Do you share any of my concerns that I mentioned with the international energy agreement, that we have commitments there that we would, in effect, be exporting SPR oil?

Mr. WAMPLER. I think we have commitments. I think those commitments were honestly made, and I think we have to keep our commitments. We also have to constantly evaluate those commitments, and we intend to do that. I do support those commitments.

Senator NICKLES. We will be reviewing that in one or two years, and I would encourage you to take a look at those commitments.

Some of our allies that we have those commitments have done a good job aggressively in nuclear energy. Unfortunately we have not. But we have been aggressive with SPR, and I question whether or not we would want to be basically in effect shipping out some of this very expensive oil that we have invested in.

Mr. WAMPLER. I can tell you personally that we constantly encourage our allies to stockpile. I mean on every foreign trip, literally, that we go on, that is a major issue. So, we are trying to get them to stockpile more and more.

Senator NICKLES. Mr. Wampler, thank you, and, Senator McClure, thank you as well.

The CHAIRMAN. Senator Bradley.

Senator BRADLEY. Thank you very much, Mr. Chairman.

Let me echo what the chairman said about our need for your ideas and thoughts prior to writing the legislation. I think the committee has been the moving force on this issue for as long as I have been on the committee, and I think we will continue to be so in this new piece of legislation.

So, I would hope that you would have refined your thoughts enough to actually be a player in the process, because you will ultimately have to implement what we decide.

In terms of alternative financing mechanisms we are not there, Senator Johnston has proposed taking it off budget. At some point we are going to have to buy the oil, and the money is going to have to come from somewhere.

There are a number of creative, interesting, complicated proposals for getting the oil at less cost. And I wondered, have you thought through enough of these proposals to have selected your one or two favorites if you were called upon by the committee to use some alternative financing mechanism?

Mr. WAMPLER. I think, if we were forced into that issue and the Naval Petroleum Reserves are not divested to provide that source of funding, I would not really identify them as favorites.

I think we have done a great deal of work on one, which is zero coupon bonds, that simply defers your cost. I think this new issue—and I am surprised that it is not an old issue—but it is a new issue of leasing or renting oil may well have some merit. I think it is one that we have to very aggressively investigate and do that very quickly. It is one that we have not really concentrated a great deal on.

The idea has been around for some time. Whether or not it is for an increment between 750 to a billion, assuming that is passed by Congress, or whether it is for the remaining increment up to 750 million barrels, I think that is an area that we have to look at, and those would be the two that I would concentrate on, as well as any other new ideas that are out there that I think we need to take a look at.

Senator BRADLEY. Do you have sufficient authority to test these financing mechanisms or do you need us to give you additional authority to test the mechanisms?

Mr. WAMPLER. We can test the mechanisms.

Senator BRADLEY. So that everything from zero coupon to leasing to oil index bonds through all of the other suggestions, you now have the authority to test?

Mr. WAMPLER. We feel we have the authority. I guess we have looked at 30 or 40 of these, and I think we felt we had the authority to look at all of those and test those. I see no need for more authority at this time. If we do feel the need, we will certainly get back to the committee.

Senator BRADLEY. As you look at them, what are your preliminary judgments on the amount of savings that can flow from any one or two?

Mr. WAMPLER. It is complicated. And one of the major factors that makes this issue complicated is that, if you assume that you are going to lease oil or you are going to do zero coupon bonds or almost any of the other alternative financing methods, you have to go on two evaluative tracks with it. On one track you have to assume that you are not going to have a supply disruption. Then with all of these methods, at some point in time, the Government has to make a decision whether or not to renew leases, to give the oil back to the private sector or to do whatever.

The second track that you have to look at is, to assume a disruption, and when you assume a disruption, you also assume that the prices will spike. Prices will initially go fairly high. In that case, I would almost hazard a guess or almost bet—and I guess my guess would be as good as anyone else's on this because we are not tremendously accurate about forecasting prices—that the Government, even at current prices of $20 a barrel, would probably realize a profit in this sale of the oil to the open market.

So, you have to look at these things with both of those assumptions. That makes it difficult.

Senator BRADLEY. Have you done that analysis?

Mr. WAMPLER. We have done that analysis on several of the assumptions.

Senator BRADLEY. And on several of the alternative financing mechanisms?

Mr. WAMPLER. Particularly with zero coupon bonds and some of the others we have looked at less extensively.

Senator BRADLEY. Could you provide for the record your analysis on these alternative financing mechanisms?

Mr. WAMPLER. Certainly.

[The report "SPR Financing Alternatives" has been retained in committee files. Following is the Table of Contents and Executive Summary of the report:]

SPR FINANCING ALTERNATIVES

Prepared by

The Energy Futures Group

Under

DOE Contract Number DE-AC01-88FE61331

November 10, 1988

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EXECUTIVE SUMMARY

The purpose of this report is to analyze the cost/benefit characteristics, or attributes, associated with alternative concepts for financing incremental SPR fill. The curent oil market surplus offers an opportunity to acquire relatively low cost oil, so that the timing is now advantageous to increase current rates of oil fill. Moreover, rising oil imports will require a larger reserve to maintain the same degree of protection from a foreign supply disruption. Nevertheless, continuing federal budget pressures have prevented the Congress from structuring a long term financing vehicle for total SPR program authorization. As a result, alternative financing approaches which permit incremental SPR fill at no increase in SPR budget cost could be attractive at this time.

The table below identifies seven categories of financing concepts which are arrayed against the critical attributes.

ATTRIBUTES VS. FINANCING CONCEPTS

ATTRIBUTES	CONTROL Public vs. Private	REGULATION Mandatory vs. Market	FINANCING SOURCE Taxpayer vs. Investor	FINANCING METHOD Receipts vs. Debt	SPR LEVEL & FILL RATE Size and Timing
FINANCING CONCEPTS*					
Conventional	Public	Market	Taxpayer	Receipts	Moderate
Off-Budget	Mixed	Market	Investor	Debt	High
Taxes	Public	Market	Taxpayer	Receipts	High
NPR Receipts	Public	Market	Taxpayer	Receipts	High
Private Reserve	Private	Mixed	Investor	N/A	Low
Mandatory Contributions	Public	Mandatory	Taxpayer	Receipts	Moderate
Other:					
Put/Call Sale	Public	Market	Investor	Both	Low
Commercial Whse	Mixed	Mandatory	Investor	N/A	Low
International	Mixed	Market	Investor	Debt	High

* In total we identified 26 specific SPR financing concepts, plus additional variations. These were reduced to the six generic categories, plus a seventh "catch-all" category.

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This report focuses on the bracketed portion of the grid, where prospects seem greater for a higher rate of incremental fill and a larger size reserve. The private sector reserve and mandatory SPR contributions are unlikely to find significant support, while the other categories are simply beyond the scope of this report.

In terms of budgetary ease and more immediate results, the two best alternatives seem to be utilizing the Federal Financing Bank or dedicating the NPR revenues. First, a Certificate of Beneficial Interest in the SPR sold to the Federal Financing Bank could be a viable inter-governmental way of keeping the SPR fill cost off-budget. Second, dedicating NPR revenues to SPR fill would improve operational decision making for the SPR and NPR programs by linking them together for greater management efficiency. At the same time, however, other lower priority programs would have to be either reduced or funded with increased debt under current Congressional budget deficit ceilings (i.e., Gramm-Rudman-Hollings).

On the other hand, these two approaches could be viewed as "budget gimmickry" since no new sources of revenue are being created. In that event, the choice is between one of the true off-budget financing alternatives (index bonds or leasing) versus dedicated taxation or user fees. The latter approach would effectively eliminate the impact on the budget deficit through an additional source of revenue, while the investor/lender approaches could reduce or eliminate up-front oil acquisition costs in return for the government foregoing the potential appreciation in the value of the oil.

The political acceptability of SPR dedicated taxes, or user fees, depends importantly on their magnitude. For example, a dedicated tax on gasoline of less than 1¢/gallon would raise enough money to fill the SPR at 100,000 B/D for the next five years. User fees, or dedicated taxes, are administratively simple with ample precedent. Moreover, they put the political battle up front rather than run the risk of a political "profiteering" battle after a drawdown, where Congressional critics could accuse the Administration of rewarding speculators on the backs of the oil consuming public.

A list of off-budget financing proposals and some of their important contractual terms is given in the following table:

TRUE OFF-BUDGET SPR FINANCING PROPOSALS:

CONTRACTUAL TERMS

	INTEREST COST/ RENTAL FEES	MATURITY	PAYMENT SCHEDULE	BENEFICIAL INTEREST	OIL OWNERSHIP
INDEXED BONDS DOE/EFG (Internal Discussions)	BID DISCOUNT FROM INTERMEDIATE TERM T'BOND YIELD AS FLOOR, OR OIL PRICE, WHICH-EVER IS HIGHER	7-12 YEARS	ZERO COUPON	INVESTOR, 15% CEILING, INVESTOR CALL ON REDEMPTION, USG CALL ON PRES. DECL.	USG
INDEXED BONDS PRINTON-KANE-1988	3% ANNUAL YIELD PLUS OIL PRICE APPRECIATION AT MATURITY, NOT LESS THAN PAR	30 YEARS	QUARTERLY OR SEMI-ANNUAL COUPON	INVESTOR, USG CALL ON PRESIDENTIAL DECLARATION	USG
PETROLEUM EQUITY CERTIFICATES GRAMM, 1981	NONE	10 YEARS WITH DOE BUY-BACK	NONE	INVESTOR, USG CALL ON PRESIDENTIAL DECLARATION	USG
TRUST RECEIPTS OMB, 1996	1/2 T'BOND RATE AS FLOOR, OR OIL PRICE, WHICH-EVER IS HIGHER	5 YEARS	ANNUAL COUPON	LENDER, 15% CEILING, USG CALL ON PRESIDENTIAL DECLARATION	LENDER
BANK LOAN BANKERS TRUST 1987-88	50 BASIS POINTS BELOW 5 YEAR T'BOND	5 YEARS	SEMI-ANNUAL INTEREST PLUS BALLOON REPAYMENT	USG, FLOOR ON FILL COST	USG
RENT OIL ELF 1987-88	T'BOND RATE (management fee equal to interest cost)	NOT SPECIFIED BUT PRESUMABLY VERY LONG TERM	PERIODIC (e.g., quarterly)	LESSOR, USG CALL ON PRESIDENTIAL DECLARATION	LESSOR

These financing proposals are distinguished by the central feature of borrowing money vs. borrowing oil. Borrowing oil is a new concept, but has several advantages. No contingent liability is created and the imputed interest cost savings could be substantial. In our view, some ceiling on the price appreciation, in the event of drawdown, would still be needed to mitigate the profiteering issue, so that some of that interest cost savings might be reduced. The most difficult problem with any short term oil leasing proposal is renewal at maturity, since the lessor could not physically take his oil out of the SPR if no drawdown were to occur. Since the Elf proposal appears to be very long term, it might have some advantage over the Trust Receipts.

Borrowing money on the other hand, is not a new concept to the federal government. In this regard the Intermediate Term Indexed Bond would be preferable to the Trust Receipts. The refinancing issue is not a problem since a series of annual bond sales could be held as long as the SPR existed. It would become similar to any Treasury re-financing. The contingent liability problem does remain, however, raising the issue of increased long term budget authority. Using the existing SPR oil as partial collateral for these bonds might reduce the need for some of that increased budget authority.

The results of a hypothetical but still realistic economic model are shown in the table below:

Cumulative 25 Year Budget Authority For Assumed 12 Year Fill Program
($ billion)

(100,000 B/D at first year cost of $15/bbl.)

	CASE A: (6% Per Year Oil Price Appreciation)		Case B: (Oil Prices Flat at $15)
	Cost	Contingent Liability*	Cost
Fully Funded SPR fill	~~19.1~~ ?/		6.5
Borrowing at 9% Simple Interest	24.5		17.9
Borrowing at 9% Compound Interest	47.7		36.3
Zero-Coupon Indexed bonds (7%)**	33.1	77.8	24.4
Short Term Lease (3%)**	33.7	83.3	13.2
Long Term Lease (12%)	20.6		14.8
Value of Oil in Year 25:	27.8	73.9	6.5
Net Cost of Long Term Lease	48.4		21.3

* Budget authority needed should oil prices escalate at 15% per year.

** For years 13-25, conventional 9% Treasury bonds are used to fund the outstanding debt, paying that interest out of general revenues.

Conventional Treasury borrowing for incremental SPR fill, funding the associated interest cost out of general revenues, would be significantly cheaper than both intermediate term index bonds or lease arrangements (i.e., $24.5 billion vs. $33-$34 billion). On the other hand, funding the associated interest with further borrowing, thereby compounding the interest cost, is significantly more expensive than index bonds or short term leasing (i.e., $47.7 billion vs. $33-$34 billion). The lowest cost alternative, from both the annual appropriations and long term budget authorization viewpoints, would appear to be long term leasing, but in contrast to the short term financing proposals, all of the price appreciation would be forgone by the USG, raising the net cost of long term leasing from $20.6 billion to $48.4 billion. As a result, the intermediate term zero-coupon index bonds or the short term lease arrangements where the USG ends up owning the oil become the least cost alternatives under these assumptions. This conclusion should be qualified by the assumption of rising prices; if prices remain flat or decline, a series of lower rate short term leases would be less costly.

Finally, a mix of financing approaches might in fact be optimal, given the constraints on any single approach. Diversifying the financing mix would not only reduce the magnitude of any single financing alternative, but could also diversify the ways in which the SPR might be utilized.

The CHAIRMAN. Would the Senator yield.

Really what we need is some proposals.

Senator BRADLEY. That is maybe asking too much when he said he is going to wait a year.

The CHAIRMAN. We need to get the private people to give us, if not some hard proposals, at least some pro forma-type proposals of what they think it might cost, and we ought to be inviting those like right now in terms of, as I say, not in terms of an offer we can accept, but at least in terms of a proposal.

And I am just amazed that the financial houses have not been knocking down your door with that.

Mr. WAMPLER. Many have. I think there are a couple of problems in many of these alternative methods that otherwise, if these problems did not exist, would certainly be viable.

I think we have to make sure that the Government maintains control of the oil. In case of a drawdown, we have to have absolute control over that.

I think the second thing we have to watch is to make sure that there is a system that provides for protection against profiteering if we have a supply disruption.

I also think that we have to very carefully look at the existing stock of oil that we have in the ground and make sure that we do not encumber that stock of oil. Those were the criteria that we used when we started taking a look at these issues.

Senator BRADLEY. If I could continue with my questions.

Senator MCCLURE. I wanted to ask one question out of his comment, if I might.

What is profiteering?

Mr. WAMPLER. If you have a disruption, you are very likely to have a very substantial price spike upward.

Senator MCCLURE. Is that not why people would invest?

Mr. WAMPLER. That is why people would invest, but there also would be the capability to hold onto the stocks for a period of time, longer than would necessarily be held, simply for the motive of realizing more profit. The longer you hold on, the possibility of realizing more profit is there.

Senator MCCLURE. You are talking about the control of the movement of the oil rather than the price at which it would be sold.

Mr. WAMPLER. You can do it by both methods. You can control the movement of the oil. You can also, as we looked at zero coupon bonds, place a cap on the amount of profit that the private sector could realize, bringing back to the taxpayer some of that profit after it reached past a certain point.

Senator MCCLURE. I understand that, but the minute you start saying the government is going to determine how much profit you make, you begin to reduce the reason why anybody would invest.

Mr. WAMPLER. I did not intend to mean that with that statement.

Senator MCCLURE. Excuse me.

Senator BRADLEY. So, you have done this analysis in alternative financing mechanisms. Should we take everything that Mr. Safer says in the next panel as being something DoE has supported?

Mr. WAMPLER. Mr. Safer's testimony will disclaim his appearance on behalf of the Department. He is appearing on behalf of himself.

By the way, let me add, he has done an incredibly good job for us.

Senator BRADLEY. But I just want to make sure I understand. You say that you have sufficient existing authority for alternative financing means including the authority to issue convertible bond or an index bond?

Mr. WAMPLER. We see no problem with that. We looked at that issue extensively last year when we were looking at zero coupon bonds and saw no problem.

I am not saying, however, that there is not a method of financing out there that, should that be the acceptable one, we might not have to have some additional legislative authority for.

Senator BRADLEY. Let me turn, if I can, to the question of regional storage. Where are you now in terms of thinking about regional storage. I notice in the report you point out that it is the Delaware-New Jersey area, and that is uniquely situated for additional regional storage.

Mr. WAMPLER. Our current thinking on regional storage is that we can take care, in the most cost-effective way, of almost any scenario that we can anticipate happening now and into the immediate future by having centralized storage in the Gulf.

We looked at this issue very hard. I think by reading the report you can tell that, and we think we can accommodate the problems in the most cost-effective way by Gulf storage.

Senator BRADLEY. So, you have looked at the idea of regional storage and rejected it?

Mr. WAMPLER. Yes, in essence we have. We have looked at some specific regions in the country and just did not feel that it would be as cost-effective.

It is very, very difficult to beat the price of storing oil in salt domes.

Senator BRADLEY. You looked at the regional storage for what reason?

Mr. WAMPLER. It was part of the request from Congress in a study to take a look at regional storage plus the fact that regional storage has certainly been an issue since the inception of the Strategic Petroleum Reserve concept.

Senator BRADLEY. So, this was Congressionally mandated, review of original Congressional intent.

You took that review and decided that it still does not make economic sense to go regional storage, and that is all the way up to a billion barrels?

Mr. WAMPLER. Yes. We feel it does not make sense to do that.

Senator BRADLEY. Thank you very much, Mr. Chairman.

The CHAIRMAN. Just one final question here.

Excuse me, Senator McClure has not been recognized.

Senator MCCLURE. First of all, I would ask that my statement be placed in the record at the appropriate point.

The CHAIRMAN. Yes, your statement will be received.

Senator MCCLURE. One of the points I made in the opening statement I will follow up with questions and that has to do with our

obligations under the International Energy Agreement. As our net imports rise, our capacity to meet our international obligations shrinks, because that is in terms of days of reserve.

Does the Administration fully support the United States' continued international leadership and support for complying with the obligation by all IEA member states?

Mr. WAMPLER. Yes, Senator, we do.

Senator MCCLURE. Do you agree with the assessment of current trends and oil imports and their implications for our continued compliance with the IEA obligation?

Mr. WAMPLER. Yes, I do and as I pointed out earlier, the 90 day obligation includes both Government and private stock, so we are still in good shape under that obligation.

Senator MCCLURE. We are, but what are the trends?

Mr. WAMPLER. The trends are going down. They are downward trends. We would anticipate, with the rising level of imports, of course, they would continue to be downward trends.

Senator MCCLURE. You have already commented in response to a question from Senator Nickles with respect to the export of SPR stocks. One of the things that worries me a little bit about the public discussions of oil supplies is the failure to recognize that oil is a fungible commodity. It really does not matter what the source of the oil is, it all goes into the same market and there is not any way you can separate this stock of oil from that stock of oil when it once enters the marketplace.

It has the same effect on the market and whether you isolate our SPR stocks from export and therefore import less, or whether we export stocks, it is a wash. It all comes out about the same in practical terms, although certainly it might have more political acceptance if we say we are not going to export any SPR stocks.

The second point that I think should be made, and Senator Bradley did make it, I want to underscore it. That is, in the event of an emergency and if there is any drawdown on the SPR stocks the prices are apt to be such that we will make a profit on it regardless of where we stand with respect to the current markets, because we will not be drawing down on SPR stocks under current market conditions and I hope the American public understands that we are not planning to sell that right now. That insurance policy is against a time when the price would be radically different than that we see right now.

The Administration has proposed the use of receipts from the sale of Elk Hills to underwrite the filling of the SPR. What are your assumptions regarding the receipts that would be received by the Federal Government from such sale?

Mr. WAMPLER. If you look at an income divestiture bottom line, we are talking about, if you include the billion dollars cash; the 50,000 barrels per day of fill, and the money for the Defense Petroleum Inventory, a grand total of about $3.4 billion.

Senator MCCLURE. It is a billion dollars up front, is a minimum bid that you would accept, together with an obligation to supply the oil for the SPR fill—50,000 barrels a day—and that 50,000 barrels a day is a part of the consideration of the sale, it is not just making that quantity available at market prices. It will make that quantity available as a part of the payment for the Elk Hills Re-

serve. It would be without payment to them for that 50,000 barrels a day. Is that correct?

Mr. WAMPLER. That's true.

Senator MCCLURE. What are your estimates of the reserves of oil and natural gas that exist at Elk Hills?

Mr. WAMPLER. About 450 million barrels of oil and about 1.5 trillion cubic feet of gas, currently.

Senator MCCLURE. How do you differentiate the Federal reserves from those owned by the private sector?

Mr. WAMPLER. 78 percent of the reserves at Elk Hills are owned by the Federal Government, 22 percent by Chevron.

Senator MCCLURE. Is that an agreed figure, or is that the government's figure?

Mr. WAMPLER. That is in our current unit plan contract, so that is agreed to by both parties.

Senator MCCLURE. In the event of a sale, that would enure to the benefit of the purchaser? Those figures would still hold?

Mr. WAMPLER. That's true.

[Subsequent to the hearing Mr. Wampler submitted the following:]

Committee on Energy and Natural Resources:

As a witness before the Committee on Energy and Natural Resources on May 4, 1989, I request that the following information be included in the hearing record:

Page	Line (s)	Proposed Wording
51	2-3	That is an average of the equity interests in each of the currently producing zones pursuant to our current unit plan contract, so that is agreed to by both parties. These equity percentages can be revised under the contract and any such revision is retroactive to 1942. If there is a disagreement between Chevron and the U.S. on the appropriate equity percentages, the Secretary of Energy has the authority to resolve the dispute unilaterally.
51	7	That's not necessarily true -- we plan to negotiate a new unit plan contract with Chevron prior to divestiture which would address the equity issue and many others.

I understand that this material may be inserted in the transcript in the form of an appendix for correction/clarification and referred to by footnote in the main text.

J. Allen Wampler
Assistant Secretary for
Fossil Energy
U. S. Department of Energy

Senator MCCLURE. Does the other signatory to that contract agree that that is true?

Mr. WAMPLER. As far as I know, they do. Now, the sale would be structured for the Government's part of the Reserve, not Chevron's part. It would not be sold in total. It would just be the 78 percent share of the Federal Government.

Senator MCCLURE. What was your fiscal years 1989 and 1990 budgetary assumption regarding the price per barrel for SPR oil purchases?

Mr. WAMPLER. About $15 a barrel.

Senator MCCLURE. Since current oil prices are about $20 to $21 a barrel, what would be the fill rate that the Administration would support?

Mr. WAMPLER. It will run about 60,000 to 65,000 barrels per day this year, under those price assumptions.

Senator MCCLURE. You have also suggested as part of the Elk Hills sale, a proposal to establish a Defense petroleum inventory. What does the Administration envision for the Defense petroleum inventory in terms of its size?

Mr. WAMPLER. It would be a 10 million barrel single cavern.

Senator MCCLURE. Would it be a crude or product inventory?

Mr. WAMPLER. It would be a crude oil inventory.

Senator MCCLURE. Your statement indicates that that inventory would be located with SPR. Does the Administration envision a Defense petroleum inventory as an actual physical part, or subpart, of the SPR?

Mr. WAMPLER. Ultimately it would be an actual dedicated cavern within the Strategic Petroleum Reserve. That drawdown would be at the sole discretion of the Secretary of Defense.

Senator MCCLURE. It would not be subject to the same conditions for drawdown of the IEA Agreement as is the SPR?

Mr. WAMPLER. No, Senator, it would not.

Senator MCCLURE. Would it be in addition to the SPR fill rate?

Mr. WAMPLER. It would be in addition to the 750 million barrels, yes.

Senator MCCLURE. How about fill rate? It would also be in addition to the fill rate for SPR?

Mr. WAMPLER. Yes, it would be. That is the extra obligation the private sector would——

Senator MCCLURE. Is that a part of the 50,000 barrels a day, or is that in addition to it?

Mr. WAMPLER. It is in addition to the 50,000 barrels a day.

Senator MCCLURE. The current policy position is that it is easier to source crude than it is to store product. That is current policy. As I understand your statement, it supports the continuation of that policy. Am I correct?

Mr. WAMPLER. That is correct.

Senator MCCLURE. Are there any circumstances under which it might prove prudent to store product rather than crude?

Mr. WAMPLER. The only circumstance that I could envision that it might make sense is if we lose a tremendous amount of refining capacity in this country and we do not anticipate that happening. Then we have to take a look at it again, but that is something that we would not envision happening at all in the short term and, if

that did happen, we would certainly take a look at storage of product.

Senator MCCLURE. I want to state for the record that—what you know is true, but I want to state it for the record. I have supported the increase of the reserve to 1 billion barrels. I have done that in legislation which I have sponsored in both the 98th and 100th Congresses. I still believe that is prudent for us to do. I hope the Administration will agree at some point with that policy statement.

I am pleased that you have studied that report—I mean, that report is completed and I think the question was asked. If it has not been, will that study be forwarded to the Congress and the report published?

Mr. WAMPLER. The Administration's position will be forwarded to the Congress. We have already forwarded the billion barrel study that looked at the economics and the methods to get to a billion barrels, but not the policy implications.

Senator MCCLURE. Do you intend to forward to us a recommendation?

Mr. WAMPLER. We will forward to you within this year a recommendation.

Senator MCCLURE. Within this year?

Mr. WAMPLER. We will attempt to speed that up, Mr. Chairman and Senator McClure.

The CHAIRMAN. We hope to go to markup, unless Senator McClure or others have serious objection, in June, so next year will not be in time.

Senator MCCLURE. If you hope to have any input into the discussion I would suggest you do it earlier rather than later.

Mr. WAMPLER. We realize that, Senator.

Senator MCCLURE. One point, and I did not pursue the question. I had interrupted Senator Bradley earlier with respect to what is a profit? If I understand, your distinction between profit and profiteering is whatever the government decides it is.

Mr. WAMPLER. That is one way you could possibly draw a conclusion about what I said. I think the point is, if we choose to use it, there is a method that we think makes sense, that can allow the private sector to realize a reasonable and good profit, without getting us into a situation that, due to the fact that they can do some holding on to the stocks or there are some variables in the delivery schedule, they do not prevent what we are trying to have happen not to happen, and that is to keep these prices as level as we can during a supply disruption.

Senator MCCLURE. I would assume that if the drawdown under such a private financing scheme were in the government control as you outlined, then they could not manipulate price by delivery schedules or terms and the price would be set by whatever the speculative forces were in the market at the time rather than the action of those who owned the stocks.

Are you concerned about people owning shares in the SPR stocks and also owning private stocks and manipulating the private stocks in order to influence the delivery or schedule of the SPR stocks?

Mr. WAMPLER. Our concern is simply, that under our current procedures we allow the stocks to be delivered—they can hold the stock for 30 days, for example, and, during a supply disruption, we

have some concern that there is a possibility, if you have a substantial supply disruption, that this could create the conditions under which you would draw down SPR.

The market reacts very violently to some of these things. We saw a spike in the market price with the Valdez situation just recently, which was fortunately very brief—it came back down. But if we see some panic buying and some things of that sort within that 30 day period, there is certainly an opportunity and a possibility that there would be some widespread panic and prices would skyrocket. The longer the stocks are held before they are put into the system, it would certainly seem reasonable that that would further exacerbate that situation.

So I think that we have to have a system that ensures that, through whatever method, whether it is a cap on profits or whether it is mandated by regulations or procedures, that that oil not be artificially held for any length of time—that it goes into the market as quickly as it should.

Senator MCCLURE. I would agree with you totally with respect to the stocks being artificially withheld from the market. I do not quite understand how you expect to induce private financing if the government both controls the delivery date and also puts a cap on the price, because the very nature of the reason to involve yourself in this kind of investment would be speculative. You take the speculation out of it, there is no reason for the investment, so you have almost guaranteed a market nonresponse to the invitation for any kind of bids or interest.

Mr. WAMPLER. Well, in the case of zero coupon bonds—and I am a little rusty on this, because I looked at it a year ago—but what would be allowed is a reasonable profit at a reasonable interest rate during the time that the bond was held, then an additional profit at such time that the stocks were drawn down up to a cap, so we felt after checking with the financial market, that there was certainly sufficient inducement for the investment.

Now, we have to reexamine that issue, if we are talking about renting.

Senator MCCLURE. I am not an investor. If I had the money, government regulations would not permit me to be. So for two reasons I am totally removed from that speculation. But I can tell you, if I were an investor and a speculator and I were sitting here and the government was saying, well, we will permit you a reasonable rate of return and I would say, what, and you would say well, whatever is reasonable and we will decide that at the time, I would say go find yourself another patsy.

Now, I am not very interested in doing that. I have lots of faith in my government but I have lots of faith in my government to screw up something.

The CHAIRMAN. Even if you set the profit in advance, then you would have to pay for it with a larger premium every year.

Mr. WAMPLER. That is true. The profit under any case that we have ever considered would not be determined at the time of the drawdown. That would all be predetermined with envelopes that had lows and highs and midpoints in them. But let me make sure that I am on the record as saying that we still think that the best way that the Strategic Petroleum Reserve will function during a

supply disruption is through the free market. We have not changed that at all. We are just looking at ways that we can protect against an accusation of windfall profits and those kinds of things.

Senator MCCLURE. You get those accusations. I can name some members of this committee—or at least one member of this committee—that can be depended upon to make that accusation no matter what you did. So let us set that one aside for a moment.

That is just political rhetoric on the part of some people who will play that game no matter how you play it and if you are trying to assure the most radical of the Congress what their decisions might be or what their statements might be, you will have so stifled the opportunities that there is none with respect to private investment in this sort of thing.

You mentioned also that there was a price spike at the time of the Exxon-Valdez incident. There was. There was also a price spike at the time the tanker war started in the Persian Gulf. Both price spikes were very brief.

As I recall, in the tanker war back in 1984, the price spiked 50 cents a barrel and lasted two weeks and went back down and I think one of the reasons that it had no more effect was we already had over 400 million barrels of oil in our reserve and therefore the interruption, which might have had a greater effect, was not thought to have potentially great impact upon the availability of oil.

The fact that the United States Government committed military forces to protect the flow of oil also helped moderate the concerns with respect to the availability of oil and that, incidentally—the commitment of military forces was not just the decision of the Reagan Administration, it was also the stated policy of the Carter Administration prior to that.

Those events tend to both prove the contention that the presence of reserves and the presence of commitment by the United States moderates price movements on the market. But both the events also prove that the speculators will be in there in the short term and I think the hearings before this Committee rather convincingly stated what the headlines in the papers never reported, and that is that the price spike at the time of the Exxon-Valdez accident were unjustified as any portion of the result of the Exxon-Valdez accident and the only justified price rises were in the market irrespective of the Exxon-Valdez accident.

Now, that both proves that price rises were occurring anyhow and also that there are speculators who will jump aboard whatever they think might be a price movement because they hope to make a profit. Well, I think they lost their shirts on that one and I am glad they did, because they were wrong and they should have been wrong.

But it also says that in the short run you are going to get those price spikes, particularly when you have futures trading and I believe that causes more speculation in the market than without futures trading. You are going to get those temporary price aberrations and I understand your concern about the 30 day movements of oil and prices in a 30 day period, but you can very easily—I would submit that probably, no matter how you try, you are not going to get any of that oil out of SPR and into the market in less

than 30 days anyhow—and I notice you smile and I want that on the record.

Mr. WAMPLER. That was not an affirmative smile, Senator. I believe we can do it somewhat faster. We agree with you entirely that the presence of the SPR during the tanker war and during the recent cases certainly caused the prices just to do the temporary spike and come right back down. That is why we think that this SPR insurance policy that we have is so important and I think it will continue to be so.

My comments were more in terms of a massive disruption—a real disruption that could withhold a good deal of the OPEC oil from the market for a sustained period of time.

Senator MCCLURE. I understand that and I would expect the prices to rise dramatically in that event and I would expect the investor in oil stocks to reap the profit having put the money into the reserve. I would expect that if indeed they are permitted to get the benefit of that price rise during that period of time we will get a bid for capacity at a much, much lower price at the present time.

I do not think this is like investing in gilt-edged bonds. I think this is a speculative investment and ought to be judged as such and if we will do that, then the Administration could indeed see some relief of the budgetary pressures that this Congress from time to time tries to accomplish in different ways; and I would suggest to you I have not always—no, let me be more positive than that. I have not supported the efforts to take SPR off budget, as the chairman has done several times.

But I will tell you that if we do not find a way to relieve the budgetary pressure, the pressures for those kinds of budgetary actions are greatly enhanced and to the extent we can find a way of financing this off budget, or by private investment, you minimize the likelihood that there will be the attempts made to take government investment off budget and I hope that government budgeteers will pay some attention to that, because I think there is the potential for relieving the budgetary pressure without unduly affecting Federal budgetary processes.

The CHAIRMAN. Before I let you go, we have a Choctaw storage facility in Iberville Parish. Those people were very concerned because there was a GAO report that there was a mock attack on the facilities of the strategic petroleum reserve in which extensive damage was suffered.

Then when Iberville Parish applied for help from FEMA, they got no money.

What they need is some money to help put together in conjunction with DOE, put together a plan, and they need the money to do that.

Will DOE help and support them in their application to FEMA?

Mr. WAMPLER. We certainly will. We are very fortunate to have some very active community support, as you are aware of, down there, and some real pride in the Strategic Petroleum Reserve.

I just got a chance very recently to look at their proposal, and I think it is has some merit, and I think it could both create a situation that we could certainly get some good will, some reciprocity, and they could certainly be of great assistance during a disaster scenario or an attack scenario.

I think the proposal certainly merits consideration.

We are going to very quickly evaluate that and see what we can do, and we will be talking to them because we do think it has some merit.

The CHAIRMAN. I am pleased to hear that. Mr. Wampler, this committee—at least speaking for myself—really want your input on this issue.

We have a high regard for your ability to deal with these technical issues, and so we want your advice, and we would like to go to mark-up in June.

And so, if you would, see if you can press the department.

We also have a high regard for Admiral Watkins and his crew, Ensign Moore, and I think if you tell them we need an answer on the billion barrels and we need an answer on this legislation as quickly as possible, they are fairly simple, straightforward decisions, very important, very expensive decisions, but very simple.

So, I hope you can get those answers for us.

Mr. WAMPLER. I will convey that today.

The CHAIRMAN. Thank you very much.

We are getting a little bit behind time as we usually tend to do when we have a government witness as our first witness, so we will have to move along with a little more expedition.

Our next witness is Mr. Keith Fultz, Director of Energy Issues, Resources, Community and Economic Development Division of GAO. I think you know we have the extensive analysis of alternative financial proposals from GAO. I think you heard our principal concerns.

We would like to hear your advice on alternative financing proposals.

STATEMENT OF KEITH O. FULTZ, DIRECTOR, ENERGY ISSUES, RESOURCES, COMMUNITY AND ECONOMIC DEVELOPMENT DIVISION, GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY JAMES KIRKMAN, DIRECTOR, BUDGET ISSUE, ACCOUNTING AND FINANCIAL MANAGEMENT DIVISION; AND RICK HALE, ASSISTANT DIRECTOR FOR FOSSIL ENERGY, RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT DIVISION

Mr. FULTZ. I will keep my comments very brief, Mr. Chairman.

With me on my right is Mr. James Kirkman, who is Director of Budget Issues in our Accounting and Financial Management Division. He will be here to discuss any of the budget issues such as the off-budget items that we have talked about this morning at the hearing. On my left is Mr. Rick Hale, Assistant Director for Fossil Energy.

We do appreciate the opportunity to discuss your bill as well as our analysis of alternative methods of financing the SPR.

In essence, we think your bill is a good bill. We agree in concept with the key provisions, and we believe they are consistent with our view that the SPR should remain critical to our energy security for many years.

On a recent report we evaluated several alternative financing mechanisms for the SPR.

We found that some do have advantages. In fact, most of them do have certain advantages when compared to the conventional method.

However, all do have disadvantages or economic consequences that in our opinion outweigh the benefits, and thus, we are not prepared to recommend any of the alternatives as being clearly superior to the current process.

I would like to briefly comment on the importance of the SPR, and I, again, will keep my comments brief.

The SPR will continue to play a key role in mitigating the effects of an oil supply disruption.

Domestic production is decreasing and imports are increasing at what some would call alarming rates.

In the 1990s the world market may again become tight, and production will likely become concentrated in the Middle East.

In fact, the Energy Information Administration estimates that U.S. imports will increase to about 9.3 million barrels per day by 1995 and to 10.3 millon barrels by the year 2000.

Your bill will address the situation by extending the SPR's authority for five years, requiring the acquisition, transportation and injection activities to be at the highest possible level, and requiring the Secretary to raise the existing reserve plan to 1 billion barrels.

While we have not taken a formal position on the fill rate or the ultimate size of the SPR, we agree in concept with these provisions.

I think, as we have heard this morning, the SPR currently is not adequate to handle a supply disruption that might occur.

We also believe that there is merit to studying regional storage facilities as well as giving the President authority to distribute oil in transit.

I will now briefly comment on our analysis of the alternative financing proposals. Actually, we analyzed about 40 different proposals and compared them to the current procedure.

In essence, our analysis covered short- and long-term acquisition in financing costs to the government, the effect on the budget and national debt, and other key considerations such as who would maintain control of the oil in the SPR.

Again, we found that some of the proposals have certain advantages. They all have disadvantages or economic implications which, in our opinion, outweigh the benefits.

For example, proposals such as new taxes or user fees would reduce the deficit, but they would raise prices to the consumer.

Other proposals such as leasing or indexed bonds could reduce short-term expenditures, but might increase long-term costs by more than the initial reduction.

And proposals establishing a separate entity might place the SPR off budget. However, funding received by it would still count against the deficit.

I think it is important to note here that GAO is concerned about proposals that would establish off budget mechanisms to carry out governmental functions. We believe that these mechanisms avoid the discipline required by the budget process.

However, we have proposed some changes in the federal budget structure which address the problems of programs like the SPR. Mr. Kirkman is prepared to discuss those suggestions.

In conclusion, Mr. Chairman, we believe that the SPR will continue to be critical to the U.S. energy security into the next century. Your bill will help ensure that the SPR meets its objectives.

And, finally, although there are a variety of alternative financing proposals, we are not prepared to recommend any as being clearly superior to the current method of financing through the annual appropriations process.

Now, that concludes my summary, and we would be pleased to respond to any questions that your members would have.

[The prepared statement of Mr. Fultz follows:]

United States General Accounting Office

GAO Testimony

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The Strategic Petroleum Reserve Amendments of 1989

Statement of Keith O. Fultz
Director, Energy Issues
Resources, Community, and Economic
Development Division

Before the
Committee on Energy and Natural Resources
United States Senate

GAO/T-RCED-89-38

GAO Form 160 (12/87)

Mr. Chairman and Members of the Committee:

I appreciate the opportunity to discuss your bill, the Strategic Petroleum Reserve Amendments of 1989 (S. 694). I will also present our analysis of alternative, nontraditional methods of financing the Strategic Petroleum Reserve (SPR). My testimony today reflects our continuing work on the SPR, including our report, Strategic Petroleum Reserves: Analysis of Alternative Financing Methods (GAO/RCED-89-103, Mar. 16, 1989).

Your bill extends the SPR's authorizing legislation and requires DOE to both continue to fill it at the highest practicable rate and plan for its expansion to 1 billion barrels. The bill also gives the President authority to distribute SPR oil while it is in transit. We agree in concept with the bill's provisions. They are consistent with our view that the SPR will remain critical to the United States' energy security into the next century.

We reviewed approximately 40 alternative methods for financing the SPR. While most of them have some advantages, all of them have economic or other disadvantages that may outweigh their benefits. Accordingly, we cannot recommend any as being superior to annual appropriations that are recorded in the budget. Further, we are concerned about the growing number of proposals to establish off-budget entities to carry out governmental functions.

BACKGROUND ON THE SPR

The SPR, authorized by the Energy Policy and Conservation Act (Public Law 94-163, Dec. 22, 1975), as amended, is the nation's first line of defense in an oil supply disruption. By law it may not be drawn down and the oil distributed unless the President determines that a severe energy supply interruption has occurred or that drawdown is necessary to fulfill U.S. obligations under the international energy program.

As of April 1989, over 565 million barrels were stored in the SPR, and over $19 billion in appropriations have gone toward its development. In fiscal year 1988, DOE disbursed $338 million from the SPR petroleum account for the acquisition and transportation of 20.8 million barrels of oil. On the basis of the amounts appropriated and the market price of oil, DOE currently expects a fill rate of 60,000 to 65,000 barrels per day during fiscal year 1989.

Future expenditures of between $5 billion and $6 billion may be required to bring the SPR's inventory to 750 million barrels of crude oil, enhance drawdown capability, and improve distribution capacity. DOE has also recently estimated that an additional $6 billion may be needed if the SPR is expanded to 1 billion barrels. Particularly during this period of budget austerity, these expenditures are significant.

FUTURE ROLE OF THE SPR

Current trends point to increased importance of the SPR over the next decade. In our report, Energy Security: An Overview of Changes in the World Oil Market (GAO/RCED-88-170, Aug. 31, 1988), we said that although the United States, like other major oil-importing countries, is less vulnerable to an oil crisis today than it was a decade ago, certain developments may over time increase its vulnerability. For example, U.S. domestic production is decreasing, and imports are increasing. In the 1990s the world oil market may again become tight and production may become increasingly concentrated in the Middle East.

Because of the increase in U.S. oil imports, the import protection provided by the SPR has begun to decline. According to DOE, the amount of oil in the SPR from 1983 to 1987 exceeded 90 days of imports, but it has now fallen to 89 days. The Energy Information Administration has estimated that over the next decade, net oil imports will further increase from about 6.3 million barrels per day in 1988 to about 9.3 million barrels per day in 1995 and 10.2 billion barrels per day in the year 2000. If these estimates are accurate, the SPR, even when filled to its currently planned 750-million-barrel capacity, would not provide 90 days of import protection.

THE STRATEGIC PETROLEUM
RESERVE AMENDMENTS OF 1989

The Strategic Petroleum Reserve Amendments of 1989 would address this situation by, among other things, (1) extending the SPR's legislative authority for 5 years, (2) extending the requirement that the President carry out petroleum acquisition, transportation, and injection activities at the highest practicable fill rate achievable, subject to the availability of appropriated funds, and (3) requiring the Secretary of Energy to amend the existing SPR reserve plan to provide his plans for a 1-billion-barrel SPR. The legislation would also require that the SPR be filled at no less than 75,000 barrels per day until 1 billion barrels are in storage.

While we have not taken a formal position on the appropriate fill rate or the ultimate size of the SPR, we agree in concept with the Strategic Petroleum Reserve Amendments of 1989. In our report on the world oil market, we said that the United States should continue to develop the SPR as quickly as is fiscally responsible. Further, according to DOE, if the SPR is expanded to 1 billion barrels, construction and fill would take over 10 years. Therefore, if the SPR is to meet future U.S. energy security needs, planning for its expansion should be initiated as soon as possible.

The bill also proposes that in assessing alternatives in the development of a 1-billion-barrel SPR, the Secretary of Energy consider leasing privately owned storage facilities. In our alternative financing report, we noted that regional storage reserves may have certain advantages. For example, such storage facilities could be geographically dispersed in patterns similar to the demand for oil and could facilitate distribution. However, leasing regional storage facilities may be more expensive in the long run than storing crude in the SPR salt domes. It appears appropriate for DOE and the Congress to consider these trade-offs in planning for an expanded SPR.

Current law may be interpreted as requiring that oil in transit first be placed in the SPR before it can be sold at drawdown. The bill would change this by giving the President the authority to distribute such oil when he finds that a severe energy supply interruption is imminent and that the price of world oil has increased substantially. Such a provision would appear to enhance the SPR's ability to respond rapidly to an energy emergency.

ALTERNATIVE FUNDING PROPOSALS

The SPR is currently funded through annual appropriations by the Congress. The sources of these funds are general government revenues from, for example, taxes, duties, or borrowing. Most

government expenditures are funded in this way, and SPR expenditures, for most of the SPR's history, were included in the annual budget. The Omnibus Budget Reconciliation Act of 1981 established the SPR Petroleum Account, the account that pays for SPR oil acquisition and transportation, as an off-budget account. However, in 1985, as part of the effort to control government expenditures, the Gramm-Rudman-Hollings Act brought this account back on the budget.

In our recent report, we examined approximately 40 alternative financing proposals for the SPR and compared them with the current financing procedure. Our comparison covered (1) short- and long-term acquisition and financing costs to the government, (2) the effect on the budget and national debt, and (3) other key considerations, such as who would control the SPR oil. We did not, however, quantify the costs or benefits of specific proposals. Instead, we focused on the likely impact of the proposals from a broader perspective--for example, whether a proposal would tend to increase or decrease annual expenditures or the national debt. We also did not attempt to analyze all possible combinations of the proposals.

For clarity, we grouped our analysis of the proposals into three broad categories:

-- first, proposals that increase government revenues by selling financial instruments such as bonds, increasing taxes or user fees, selling government assets or using receipts from revenue-producing assets, or selling futures or option contracts and dedicating these revenues to the acquisition of oil for the SPR;[1]

-- second, proposals that acquire oil by means other than outright purchase, such as renting or leasing, mandating that firms contribute oil to the SPR, or providing inducements to encourage private SPR contributions; and

-- third, proposals that set up a separate SPR entity to handle financing or acquire oil and manage the SPR.

Revenue-Raising Alternatives

Revenue-raising alternatives include special bonds and taxes, asset sales and receipts, and futures and options contracts. These proposals generally address the means by which the government could raise money for funding the SPR, but they do not directly affect the purchase price of oil or other SPR costs. In practice, revenue raised in these ways could be used to finance any government

[1]GAO is currently reviewing dedicated funding and will be issuing a report on this subject in the near future.

expenditure--not just to purchase SPR oil. However, these proposals dedicate the revenues to funding the SPR.

The proceeds obtained from issuing special bonds to purchase SPR oil would substitute for conventional debt (i.e., the issuance of Treasury securities), which is normally used, when necessary, to finance government expenditures. If these bonds can be sold at a lower interest rate than comparable Treasury offerings by, for example, indexing the face value of the bonds to the price of oil, the government's interest cost might be reduced. However, if the price of oil rises, the government will have to repay a greater amount when the bonds come due. This additional amount may or may not be more than the interest saved over the life of the bond on a discounted present value basis.2

Additional revenues received from new or increased taxes or asset sales, such as the sale of government land, would lower the current budget deficit to the extent that they result in additional income and budget expenditures are not increased. However, new taxes, such as a dedicated gasoline tax or a tax on petroleum products, would increase the price consumers pay for these

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2The discounted present value, also known as the net present value, is a concept that allows meaningful comparison of dollar flows, either money received or money spent, that occur at different times. In general, revenues to be received in the future are worth less than equal revenues on hand today because money on hand can be invested to yield a higher amount in the future or, in the case of the federal government, it can reduce the amount borrowed. The farther into the future the expected revenues or costs are, the less value they have in today's dollars.

products. Furthermore, the sale of a revenue-producing asset, such as the Naval Petroleum Reserve, would result in the loss of future revenue. The sale price of a revenue-producing asset would need to reflect the discounted present value of future revenues for the government to avoid a loss. In our view, asset sales should be evaluated on their own merits. We have consistently recommended against asset sales and other proposals that would reduce outlays and the deficit in the short term, but lead to higher deficits in the long run. Furthermore, the proceeds of most asset sales are excluded from the calculation of the budget deficit for purposes of the Gramm-Rudman-Hollings procedure.

The sale of options contracts on currently stored SPR oil would also raise some revenue for the purchase of additional oil for the reserve. An options contract would give the purchaser the right (but not the obligation) to buy SPR oil at an agreed-to price on an agreed-to date. Such contracts might be attractive to firms that wish to ensure that they have access to oil should a disruption occur. To retain control of SPR oil until a disruption occurs, DOE could sell options contracts at a price that reflects the expected price of oil during a disruption. However, the per-barrel selling price of such an options contract is likely to be low, reflecting that under current market conditions the risk of a disruption is also low. Therefore, this proposal is not likely to raise enough revenue for the government to purchase meaningful quantities of oil for the SPR. Selling options contracts at a

disruption price, however, may be desirable as an energy policy alternative to facilitate early distribution of SPR oil.

Alternative Ways of Acquiring Oil

Alternative ways of acquiring oil (other than the current method of government purchases) include renting and leasing, and compulsory or induced private contributions. The government could rent or lease oil at an initial cost less than outright purchase; but over several years, this alternative is likely to prove more costly since the "rent" is likely to reflect both the private sector's higher cost to borrow money and its desired profit. In addition, lease proposals might complicate drawdown unless the question of whose oil (the government's or the lessor's) is withdrawn first in an emergency is settled during negotiation of the lease.

The government, under existing provisions of SPR legislation, could require the private sector to store oil, to which the private sector retained title, in the SPR. On the other hand, the private sector might be induced to store oil in the SPR in return for some form of compensation, such as the receipt of government-owned SPR oil at less than disruption prices at drawdown. Such an agreement would allow the government to reduce its current costs in exchange for reduced expected future profit resulting from the sale of SPR

oil. Like leasing proposals, these alternatives might complicate drawdown.

Establishing a Separate SPR Entity

Some proposals suggest establishing a separate SPR entity--a government corporation, such as the Tennessee Valley Authority, or a trust.[3] Separate government entities have sometimes been established for business-type activities that generate receipts from selling products or services and finance their costs primarily by such receipts. However, the SPR, an integral part of DOE, normally generates no revenues.

A separate SPR entity could obtain oil by using some of the alternatives I have just discussed. For example, it could use funds from the sale of assets or debt to buy oil, or be the beneficiary of dedicated revenue. If the entity is off budget, its expenditures would not be reported in the budget. However, if the government provides funding to the entity, that funding would count against the deficit.

We are concerned about the growing number of proposals to establish off-budget entities to carry out governmental functions.

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[3]A trust, as used here, means an entity with the power to undertake financial transactions on behalf of another person or institution, in this case, the SPR. The Treasury also maintains separate receipt and expenditure accounts, usually called Trust Fund Accounts; these are not referred to here.

Such entities avoid the discipline required by constrained budget resources. They are a serious threat to the integrity of the government's budget and financial management systems. If the proliferation of such entities continues, it will raise grave doubts about the credibility of the government's reports on its financial operations and condition. This will make it even more difficult for decisionmakers and the public to understand and deal meaningfully with the overriding problem of the budget deficit.

CONCLUSION

In conclusion, Mr. Chairman, we believe that the SPR will continue to be critical to U.S. energy security into the next century. Your bill will help ensure that the SPR meets its objectives by requiring DOE to fill it at the highest practicable rate and to plan for expanding its ultimate size.

Most of the alternative financing proposals we examined have some advantages. However, all of them also have disadvantages that must be carefully weighed. On the basis of our analyses, we are not prepared to recommend any as superior to the current process of financing SPR oil purchases through annual appropriations. Further, we are concerned about the growing number of proposals to establish off-budget entities to carry out governmental functions.

As the Comptroller General has pointed out, the budget deficit is among the most urgent issues facing the administration and the Congress. Unless this problem is solved, it will hamstring the nation's ability to achieve vital policy goals, such as filling the SPR.

We would be pleased to answer any questions that you or members of the Committee may have.

The CHAIRMAN. I am interested in leasing the oil.

I see here that you say the problem would be the higher cost of the private people for borrowing money.

They would not be eligible for the lower government rate under—they could not receive that lower government rate for borrowing money?

Mr. HALE. What we talk about in our report, Mr. Chairman, is a proposal that would involve obtaining leased oil from a private U.S. firm, and what we are considering there is that generally private firms have a higher cost of capital.

They have desire to make a profit, so you probably would not get a rate that was equivalent to the current Treasury borrowing rate.

Now, we are aware that there are also other proposals which are outside of the scope of what we looked at, to lease oil from foreign countries. And there it has been argued that the rate that you might obtain would be lower.

The CHAIRMAN. Is there not really a wash on that, on the difference between the government's rate and the private enterprise rate?

Because the difference in private enterprise rate is the amount that they have to pay in taxes. So, is there not an exact wash on that?

Mr. HALE. That would have to be taken into account.

But I think that generally we believe that it would still probably be more expensive when you take into account both the desire for profit and the higher cost of capital to lease oil rather than to buy oil as we do now through the appropriations process.

The CHAIRMAN. Who can do it cheaper, the government or in terms of building the facilities?

Mr. HALE. Building facilities is a different story, Mr. Chairman. And we realize that there might be some advantages to having the private sector involved in constructing storage space, so we would support the provisions of your bill that look to the opportunity of studying leased storage facilities.

We think that is something that is worth studying.

But as far as supplying oil and paying for it, we think it probably would be cheaper for the government to continue to buy oil than it would be to lease that oil from a private domestic firm.

The CHAIRMAN. Without amending the Tax Code, could we provide for what amounts to full faith and credit of the government to pay private bonds?

Mr. FULTZ. I would like to have Mr. Kirkman respond to that since he is our budget expert.

Mr. KIRKMAN. There are numerous pieces of legislation, Mr. Chairman, where the federal government does pledge the full faith and credit of the government to pay off on bonds, but I think legislation would be required in this case.

The CHAIRMAN. Could you have the government pledge to the trustees on these bonds that funds from the sale of this oil would be paid first to the trustee, the government, since the government would be in control of the oil under the lease arrangements; that they would, in effect, pay those funds first?

Should that not be as good as full faith and credit?

I think it is advisable not to have to amend the Tax Code to provide for full faith and credit.

Mr. KIRKMAN. I am not a lawyer, so we would probably want to check with our lawyers, if I could I would like to respond to that for the record.

Senator MCCLURE. Would the Senator yield on that question? Maybe you could answer now or supply for the record the budgetary consequences of contingent liabilities.

Mr. KIRKMAN. Under current practices there are no immediate outlay or deficit effects of contingent liability arrangements.

For example, when the government enters into a guarantee for a student loan or any other private sector transaction and to pay in the event of a default, there is no immediate budgetary consequence.

There is no outlay shown for their contingent liability until the default occurs.

Senator MCCLURE. There is no outlay, is there an obligation?

Mr. KIRKMAN. No, sir.

There is no budget authority obligation or outlay recognition in CBO or OMB's budget documents until the contingency is erased and an actual liability is incurred.

The CHAIRMAN. It seems to me we cannot know what the difference between the government building this and providing for the private enterprise to do it until we actually get some proposals because we don't know what the relative cost of building is.

I can imagine that private enterprise could do it cheaper. We do not have environmental impact statements and all the other things.

I can imagine that there might be contractual arrangements that would amount to full faith and credit, and you do not know what the financial markets are going to consist of in terms of profit.

I can imagine that they would take less than the full cost of borrowing money, less than the government rate in order to speculate on what the price of oil might be later.

It would be a wonderful bond to buy that guaranteed you in interest the government Treasury bill rate and in addition to that gave you the right to speculate on the price of oil.

We do not know how much they are willing to lower their interest payments in order to have that right to speculate. I think we have got to get the bond houses in to give us the answer on that, and maybe they have to test the market on it. I do not know.

Mr. HALE. I would say on that, Mr. Chairman, that is an advantage that is cited by the proponents of indexed bonds.

They feel that particularly people who buy lots of oil would find those bonds attractive because they would offer some protection against oil price inflation and the proponents argue that by reducing the government's financing costs that you might have an advantage there.

The disadvantage, of course, is unless you build in some protection, the government could face higher costs down the road if you had to pay these bondholders large amounts of money if the price of oil goes up and, consequently, the value of the bond goes up.

The CHAIRMAN. You do not have to pay that much. It is not a liability.

The oil is there in the ground. They are able to speculate on the oil itself.

Mr. HALE. That would be an offset.

The CHAIRMAN. And then it is not like it is a liability of the government.

It is their oil, and you let them get the price for it.

It seems to me our real analysis should be what the final dollar cost is between just going directly off budget for the government and a sophisticated leasing arrangement. And I suspect those costs are going to be fairly close, the year-to-year costs.

The difference is, I think the government gets to speculate on the price of its own oil in the one instance, and the private people do in the other instance.

The provisions like which oil you draw down first, that is simply provided for by contract in your trust agreement.

Mr. KIRKMAN. Mr. Chairman, could I interject something at this point?

There might be a third alternative, an alternative rather than going off budget or having one of these new financing schemes.

I think you probably correctly recognize that the existing budget structure perhaps puts at a disadvantage asset kinds of programs which is what we are dealing with here.

As you are aware of a lot of proposals that the Senate has been addressing in recent months and years, address a similar kind of problem that the trust funds face.

There have been senses of the Senate to remove the trust funds, or certain trust funds like the highway trust fund from the budget. The Postal Service is a unique enterprise, and there have been proposals to remove it also.

We at GAO have recognized that these kinds of activities such as trust funds and asset kind of activities like SPR should be treated differently.

So, we have proposed restructuring the budget. A feature of it would be an operating and a capital part to the budget, with SPR being down in the capital part.

The CHAIRMAN. Well, that's a cosmic change in the budget. We cannot get that done by June.

Our next witness is going to be able to testify about how we might actually do it. So, with that in mind, Senator McClure.

Senator MCCLURE. Mr. Chairman, just a couple of questions.

First of all, when you are saying the benefits do not outweigh the disadvantages of any such program, are you looking primarily at direct budgetary effect or are you considering the so-called macroeconomic effects of these expenditures?

Mr. FULTZ. We are looking at the short-term and the long-term costs, control of the oil, and also the economic consequences.

And I think when you consider all of those with each of the 40-odd proposals that we examined, in our opinion there just are not any that clearly jump out and say this is one that we should go with or this is one that we would suggest over the current process.

Senator MCCLURE. If the federal government—well, let me rephrase that question. Are you concerned about the government losing the speculative value?

Mr. FULTZ. That has to be a consideration.

Senator MCCLURE. So, part of your consideration is the fact that although the government puts a lot of money into the SPR, they also have the speculative advantage of increased prices.

Mr. FULTZ. That is correct.

Senator MCCLURE. And you calculate that speculative value as a value to the government?

Mr. FULTZ. That is something that needs to be considered.

If I could explain why we think that—in the event of a disruption like occurred in the mid-seventies, there were severe economic consequences to the government.

In fact, some have estimated that the GNP lost during that disruption was anywhere from $26 billion—I have seen estimates as high $45 billion.

We lost 500,000 jobs during that disruption, and certainly 15, 20 years or however long it takes for something to occur, the economic consequences would be greater than that, obviously, and then the government would be asked to provide additional resources for perhaps energy credits or aid to low income families during an energy crisis due to increased oil prices.

Those considerations needs to be considered in any type of a sale or alternative financing.

Senator MCCLURE. I understand that. That is why I am a little bit puzzled when you say that the benefits of a financing arrangement don't outweigh the disadvantages because the government has so much at stake in the event of a severe supply interruption that the costs to government are almost beyond calculation.

Now, you touched on a number of the issues that do occur, and I think the estimates are conservative.

I am not going to join those who say energy prices were the sole reason for our recession in the 1980s, and there are some who make that charge. I am not one of them.

But I do believe that energy prices had a great deal to do with the depth and length of the recession.

Mr. FULTZ. I would agree with that.

Senator MCCLURE. That cost us billions upon billions of dollars, aside from the social costs, just in economic costs.

If there is a way that the government can provide at zero or low cost to the government and ensure us against that loss, why, then, do we so carefully calculate the opportunity costs in terms of appreciated price of oil?

I do not quite understand how we get ourselves to the point of saying the government must guarantee itself the right to be the speculator in oil prices when the government is the one who benefits from the reduction of volatility in the impact upon our economy.

Mr. HALE. We would recognize, obviously, there are great benefits to having the SPR in place and to have it at a size that we need to have it in terms of its protecting the economy.

Really, when we looked at the alternative financing proposals, the costs that we were talking about, most specifically, were costs to the government in terms of the amounts that you would have to actually spend on oil.

Senator MCCLURE. You are looking at the direct financial costs of the government as an investor, but not at the social costs or the indirect economic benefits.

Mr. HALE. That was the primary focus.

Senator MCCLURE. That helps me get your response a little bit better in perspective, because there is also another cost and that is if we keep these expenditures on budget and these expenditures have to compete with other programs, what is the social cost, or the cost to government and the other activities of government that have to be constrained instead of this investment? Or to put it another way, what is the cost to us if because of those other decisions that would have to be made, the other programs that would have to be constrained, we invest less in the SPR than we otherwise would? What are the costs to us in doing that?

Mr. KIRKMAN. Those are good points, Mr. McClure. I think as was pointed out, our perspective tended to be a fiscal one driven largely by our concern about the budget deficit. In recent years when that deficit reached six percent of gross national product we felt that it did have the broad economic impact that you alluded to, and we are very concerned about getting that down. That is why our perspective is on the fiscal issue.

Senator MCCLURE. I just want to make sure that I understood what your parameters were of the calculations that you had made, and they are narrower rather than broader, and I do not say that critically. I just want to be sure I understand.

Secondly, with respect to that narrower perspective, how will we really know, unless we run some tests in the market, what the alternatives are? How would you feel if we structured a test program for alternative financing?

Mr. FULTZ. I think our report which does discuss 40 different proposals, and we surveyed quite a few individuals in the private and public sector to come up with those ideas, provides a good inventory. Perhaps there is somebody that is willing to take on one of those proposals and suggest or come forth with their own, perhaps, different twist to something that we have analyzed, and there is a potential.

Senator MCCLURE. It would seem to me that we could test your theories or our theories, and I do not mean to be disrespectful in calling them theories. They are theories until they have actually been tested and put into practice, so we might really test those theories by talking about several hundred thousand barrels, or a few million barrels of reserve under one of these alternative financial schemes and see what the market tells us.

Mr. FULTZ. That is a distinct possibility.

Senator MCCLURE. I thank you very much. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Murkowski.

Senator MURKOWSKI. I have no questions.

The CHAIRMAN. Thank you very much. We appreciate your testimony. Next we have the new CEO of the Louisiana Land and Exploration Company, H. Leighton Steward, who is accompanied by Frank Walk of Walk, Haydel Engineers who have done such good work on the strategic petroleum reserve. Mr. Steward, we are very

pleased to have you and hope you can tell us the real information about what private industry can do on storing oil for the SPR.

STATEMENT OF H. LEIGHTON STEWARD, CHAIRMAN, PRESIDENT, AND CHIEF EXECUTIVE OFFICER, THE LOUISIANA LAND AND EXPLORATION CO., ACCOMPANIED BY FRANK WALK, WALK, HAYDEL & ASSOCIATES

Mr. STEWARD. Thank you, Mr. Chairman, members of the committee. My name is Leighton Steward and I am the Chairman and CEO of Louisiana Land and Exploration Company, LL&E as we refer to it short. To my right is Frank Walk, and Frank is one of the owners of the engineering firm of Walk, Haydel who, by the way, was the developer of the Big Hill strategic reserve.

I wish to comment today on the feasibility of privatizing the storage of crude oil for the strategic petroleum reserve. LL&E is one of the five largest independent oil companies in the country, and we are also a large land owner, and we own several domes that we feel would be suitable for storage. We believe that privatization of storage makes sense.

First, it can save taxpayers current dollars during a budget crunch because the government would pay no significant up front dollars through a lease arrangement.

Second, the technology for salt dome storage exists. It is a low tech engineering exercise.

Thirdly, it would bring some competition into the process by having a private company compare its cost to DOE's current cost of storage.

Now speaking for LL&E, our front end costs are low. We already own the domes so we can provide low cost storage overall since we do not have to go out and purchase a dome. One of our domes, Leeville, is in an excellent location for a strategic reserve site. It is almost directly adjacent to LOOP. LOOP can offload 1.4 million barrels a day. LOOP is tied into the VLCC port there which is the largest, the only port in the continental United States that can handle these large tankers. It is also tied into Capline. Capline is the largest pipeline distribution system in the United States which can handle 2.5 million barrels a day of delivery the crude into the refining system.

Leeville is only 20 miles from the open Gulf so we could build a line that would not only be short, but also be essentially totally across our own fee lands which helps in the permitting process. We also believe that Leeville can hold 300 million barrels of oil and could be filled within six years after the project is approved.

Mr. Chairman, I am really excited to have the opportunity to mention an additional way the SPR expansion can be done very inexpensively, how I believe the government can save huge sums of money now and even consider accelerating the fill of the strategic reserve if not enlarging it more.

A synopsis of my thoughts is one page, it is page three of my written testimony. To put it simply, this is the way it works. Our government would lease, or have the option on, oil of a foreign producer, say country X. This country by definition would have excess production capacity and also long-lived reserves. The government

would rent the oil at a low annual fee because country X has no investment to amortize or repay, so he can charge our government very little and still come out far ahead.

Country X would be using oil that would not come out of the ground for tens if not a hundred years. It has zero present value, and it should not count against his quota. He has not even sold the oil yet, and at the time of a crises then there probably would be no quotas.

If and when DOE does exercise its call on the oil, it would pay and sell at the then market price. Country X would receive, just by way of example in this illustration, say, a dollar a year per barrel rent on his zero value oil. That is one quarter of a billion dollars a year on zero value oil. I think a foreign country should consider taking less than a dollar a barrel, particularly if competition came into the picture, and I would suspect that it would because there are several countries that have an over-supply of oil and long-lived reserves. In our estimation, this would truly be a win-win situation. Low cost storage coupled with low cost rental of the oil.

We have given this idea considerable thought. It should look very attractive to both sides. I recommend that you consider these opportunities seriously. We want to proceed without studies and find out if this type of arrangement could truly be consummated.

Our preliminary numbers indicate that the combination of low cost storage and low cost option on the oil could, after the initial fill is complete, cost as little as one-quarter to one-third the cost of your conventional storage and purchase program. In other words, to say that differently, if it is one-fourth the cost, you should be able to put a billion barrels of oil in the ground for what it is going to cost you to put an additional 250 million barrels of oil in the ground with your current scheme.

I want to thank you for the opportunity to appear before this committee. I would be happy to try to answer anymore questions on this.

[The prepared statement of Mr. Steward follows:]

Statement of

H. Leighton Steward

Chairman, President, and Chief Executive Officer

of

The Louisiana Land and Exploration Company

to the

Senate Committee on Energy and Natural Resources

May 4, 1989

Introduction

Thank you, Mr. Chairman and Members of the Committee. My name is Leighton Steward. I am Chairman, President, and Chief Executive Officer of The Louisiana Land and Exploration Company. It is our pleasure to be here today to discuss the prospects for the private ownership and leasing to the Government of facilities to store an additional 250 million barrels of crude oil for the Strategic Petroleum Reserve ("SPR"). We wish to comment on the feasibility of privatizing the storage of crude oil in South Louisiana.

The Louisiana Land and Exploration Company ("LL&E") is one of the largest independent oil and gas exploration and production companies in the United States. Established in 1926, LL&E currently has assets totaling $1.4 billion and conducts exploration and production operations in the United States and abroad. LL&E also owns an oil refinery in Mobile, Alabama, and conducts crude oil, refined products, and natural gas marketing activities in the United States.

LL&E is the largest private landowner in Louisiana with title to over 600,000 acres of land and minerals. LL&E owns a number of salt domes in Louisiana which are suitable for storage and is proposing construction of an underground crude oil storage facility at the site of our Leeville salt dome in South Louisiana.

Technology for salt dome storage already exists. Utilizing the expertise of the engineering firm of Walk, Haydel & Associates, Inc., who designed and managed the construction of the Big Hill Dome, we have evaluated our Leeville Salt Dome as a viable prospect for the storage of up to 300 million barrels of crude oil. A project of 250 million barrels of storage would employ 1,000 workers during construction and would require 100 to 150 workers to manage the operation of the facility.

Private Leasing of Facilities

The private leasing of facilities as an alternative to government ownership is certainly feasible and may offer significant advantages.

The primary advantage is that it should save the taxpayers money through the free enterprise process. By leasing the facilities the government will save the high front-end capital investment, a significant advantage during a time of budget stringency. Instead of purchasing the actual facility, the government can rent the storage facility with low annual rent payments spread over the term of the storage. LL&E, which owns salt domes not presently being utilized, does not have to bear the capital cost of acquiring the domes and therefore can more economically prepare the facilities for storage of crude oil.

To enable private parties to finance, construct, and offer storage at attractive rates, it will be necessary for the government to enter into a fixed long-term (greater than five years) storage agreement. This, in fact, seems natural as the government would certainly wish the options to extend the storage period, in essence, indefinitely. The fixed obligation

of the government to lease storage space for a reasonable period of time is an absolute requirement to enable private parties to spread the cost over a period of time.

Security

LL&E recognizes the probability of different security requirements for storage facilities used by the SPR and those that are used by private companies for commercial storage of petroleum products. LL&E, working with qualified security experts already familiar with SPR security requirements, is prepared and committed to furnish the level of security required by the United States Government ("USG") or cooperate fully with the USG security forces.

Gulf Coast Attractive for Strategic Petroleum Reserve

Because of the availability of low-cost salt dome candidates and existing infrastructure, the Gulf of Mexico coastal area is unquestionably the preferred choice for additional strategic storage. Petroleum storage in underground salt dome caverns has proven to be safer, more economic, more environmentally sound, more secure, and easier to maintain than any other storage method. The DOE has previously selected the Gulf Coast as a recommended location because salt domes are widely available and the Gulf Coast is the largest center of petroleum refining and distribution in the United States. The Gulf Coast contains over forty percent of US refining capacity and the crude and refined products are tied by pipelines to the central and eastern portion of our country. The Gulf Coast is and will continue to be the place of entry for the majority of US crude oil imports. The stored crude can also be distributed by pipeline to most of the Gulf Coast and Midwest refineries and by tanker and barge to refineries on the East Coast, West Coast and to noncontiguous areas.

LL&E Dome

Our Leeville dome is particularly well suited for SPR needs and is located adjacent to the Louisiana Offshore Oil Port ("LOOP"). LOOP is the only continental US facility capable of handling Very Large Crude Carriers ("VLCCs") and can presently receive oil at the rate of 1.4 million barrels per day. The storage facility will be connected to the largest crude oil distribution network in the US with total capacities approaching 2.5 million barrels per day. Included in the distribution network is the Capline Complex. The Capline Complex demand for crude oil estimated by DOE is expected to triple by the year 2000 as US production declines and US imports from Canada decrease. Also, as a result of being connected to the LOOP pipeline terminal at the Clovelly salt dome, the SPR could increase its distribution capability to five additional lower Mississippi refineries.

Our Leeville facility could handle the entire 250 million-barrel expansion of SPR or any portion thereof. We believe oil storage could start within three years after the commitment. 250 million barrels of storage can be achieved four years after start of fill if the USG should desire a rapid fill rate. In a drawdown situation, we could pump out one million barrels per day.

Recommendation on Very Significant Additional Savings Available

We recommend one additional step be considered by our government to minimize the current drain on the budget caused by strategic stockpiling of crude. Our government could lease or option the oil that goes into storage. Current capital investment would be essentially eliminated because the crude would not be purchased until withdrawn from storage.

If the crude were supplied, for example, by an OPEC country with excess production capacity and long reserve life, that country would be getting some rental or option income from barrels that would not otherwise provide any present value income. The option crude should not count against current production quotas because it technically belongs to that country until the option is exercised. The situation triggering the exercise of the option would likely also create an end to quotas. The agreement would provide for the exercise price to be at an auctioned market price.

Simply stated, the program would work as follows:

LL&E would provide low-cost storage space in a dome it already owns.

The USG would provide LL&E with a long-term lease agreement to satisfy financing and return requirements.

Crude would be provided by Country "X" with the USG having an option to call the crude and auction the crude with the SPR oil.

Country "X" would receive, for example, $1 per barrel per year on crude that would not otherwise be sold for tens of years. This would provide Country "X" with a quarter billion dollars per year of "free" income.

Since the USG would not be out any front-end lump sum dollars, it could consider accelerating and/or increasing the amount of strategic reserve. The option plan could apply to the remaining 200 million barrels required under the present SPR program.

This should truly be a win-win situation.

Summary

LL&E believes the leasing of private storage facilities is not only feasible but should be preferred over the current program of government-owned storage. Very significant additional capital savings could be realized by initiating a program to lease or option the crude itself. LL&E will continue refining its plan to provide salt dome storage and would like the opportunity to discuss the project or the option idea at greater length with interested government officials.

The CHAIRMAN. Mr. Steward, thank you very much. If yours was a proposal here and I were DOE, I would say yes, yes, before you changed your mind. I think if it is a proposal for legislation before this committee, we would also say yes, yes, because it is obviously very, very attractive for the government. Now what we have to do is get some specific proposal. We want to go to mark-up in June. You have heard Senator McClure say, and you have heard me say, and others on this committee, that we think we need a billion barrels. We may be out in front of the Department of Energy. We hope they will catch up by the time we go to mark-up, but we think we need that.

As far as I am concerned, the increment is not a way to speculate for the government, it is an insurance policy, an insurance policy which pays dividends in terms of foreign policy, independence, in terms of protection of the country in times of disruption, in terms of a lot of things. I have seen the country held hostage. I have heard a Secretary of Energy say that we dare not fill our SPR because the Saudis do not want us to. I have heard that come out of the mouth of the Secretary of Energy of this country. In other words, our foreign policy changed because we did not have a SPR.

What we want to do is get that SPR filled. What we need from you is specific proposals. I can see a couple of ways to do it. Foreign countries are fine as far as I am concerned. If we have a lease on that oil, the fact that it is a foreign country does not detract at all from the security of this country. It is here, it is under our control, it serves that insurance policy function that you are talking about. I think there is a very big question about whether OPEC would let them store the oil there and not count it under the quota. If they would, that would make it much more attractive for these countries to do so. Even if they counted it as part of their quota, they might want to do so. I do not know.

I can see alternative proposals where you could furnish the facility and have one of the bond houses sell bonds to the public where they would be guaranteed a certain rate of return during the time the oil is stored there, and a right to speculate in case there was a drawdown. You would have to go through the exercise of drawing up the trust agreement and all the provisions about how this is drawndown first, or contemporaneously with, or at the same rate, or after the government oil, all of those things. Only in going through the exercise can you figure that out.

We are ready to move, I think you have heard here today. I would urge you to go ahead and do it. Let's say you were a DOE facility, and this question is directed to both you and Mr. Walk, could you build this faster or slower? Would the cost be greater or lesser if you were doing it as part of DOE or if you were doing it on your own?

Mr. STEWARD. Mr. Chairman, I firmly believe in doing it on our own. We could do it a lot less expensively. The report that came out in April, the report to Congress on the billion barrel expansion, has a figure in here of what it would cost for a Gulf Coast salt dome which seemed to be the lowest cost dome that the DOE could find, and their estimation in there is $5.00 to $7.50 a barrel to create new storage in which to put oil, whether it is government's oil or whether it is leased oil.

We firmly believe, and we have spent a lot of time with the Walk, Haydel firm which has already had a lot of experience with SPR, that would could—I am going to have to give you an estimate—we could provide storage at a cost of $2.00 to $2.50 cost to provide the caverns in the ground and all the surface facilities and pumping and pipeline that goes with it. That is a dramatic difference I know, but that is what our preliminary numbers indicate to us.

The CHAIRMAN. Let us ask Mr. Walk about that.

Mr. WALK. Mr. Chairman, very definitely. The development of storage facilities in the private sector can be done less expensively and faster.

The CHAIRMAN. Why is that?

Mr. WALK. Let me say I am speaking from experience. As you know, Mr. Chairman, we have had now some 30 years of experience in the private sector. We have now had some 10 years of experience in serving DOE and the strategic petroleum reserve. Therefore, you know that when I say this I am saying it from experience, from knowledge.

The CHAIRMAN. What are the——

Mr. WALK. What are the factors? Okay, let me name a few. First of all, procurement under the government regulations is much more expensive than under private sector procurement regulations. There are always conditions and contracts that cause contractors to escalate their prices.

The CHAIRMAN. What kind of conditions?

Mr. WALK. Onerous, really very difficult provisions. They are so difficult that if—let us say it would be impossible for a contractor to comply with all of those provisions if the contracting officer chose to enforce them all all of the time. It is that kind of a situation.

The CHAIRMAN. I think you are right. I just want some examples so if we have to get out on the floor and defend private enterprise development of this I can say it costs more because of onerous provisions such as.

Mr. WALK. Mr. Chairman, I will be glad to give you some detailed listings of the types of things.

The CHAIRMAN. That would be useful to us if we are going to go with private financing of this thing. I think it probably would be cheaper. How much cheaper do you think? In other words, how much premium does that put on the bid?

Mr. WALK. I would say from my experience that this is from 30 to 70 percent and sometimes more than that.

The CHAIRMAN. How about the speed of moving?

Mr. WALK. Speed, again using the government procurement procedures, it always takes a much longer period of time because there are longer periods that are necessary for putting out the procurement procedures, putting out the request for proposals, and handling and dealing with them once they are in. It just continues to go on and on, so much so that under normal circumstances something that would be done normally in the private sector in a matter of two to three months in the way of going out and preparing a request for proposals, going out for bids, receiving them, eval-

uating them, and awarding the contract may, at times, take a year or more for the government to do this.

I have not mentioned one thing which, of course, was very much experienced, as you well know, in connection with doing the Big Hill project and that was the moratoriums that went on on construction there. Every time you do this you add to cost and to time consumed. When you shut a job down, a little bit later you fire it back up again.

Mr. STEWARD. One of the reasons I believe our dome would be a lot cheaper is we do not have to buy the dome to start with, and if the government did it, they would have to be out the capital dollars to actually purchase the site themselves, and that will make a difference in the overall cost per barrel.

The CHAIRMAN. Is your dome leased out?

Mr. STEWARD. It would have to be leased out. I simply meant the land does not have to be bought, and some of these salt domes are reasonably expensive to buy. I think some of them have gone for as much as $30 million.

The CHAIRMAN. I would think what you would need to do is this: get together with—first of all, you have to find out about your foreign source, and then you need to get together with your attorneys and have them advise us of what changes in law, if any, would be necessary to accommodate this kind of arrangement. As I say, we want to legislate.

Mr. STEWARD. Mr. Chairman, really we are talking about two separate things here. I know that our prime purpose for being here today is to talk about the feasibility of private people furnishing the storage site itself, and then also maybe to talk about the other portion of this. My comments just recently were really aimed at talking about our cost of developing the storage.

This other idea of having, say, OPEC oil put in the ground here in the United States, admittedly within touch by the U.S. Government, I believe that is more a government to government kind of a negotiation that should go on.

We are happy to and, in fact, would like to try to get some if not several foreign governments interested in this idea, and I honestly believe they will be very interested in the idea. The only real negative to this on behalf of the foreign government is they will say, well, if they get a big enough stockpile here it may dampen the price rise if some kind of crises occurs.

I would suggest that if a crises occurs, it is probably going to be a world-wide crises, and they will probably be able to produce all the oil they want to and sell it on the world market even if we have a supply in this country because we would be the only country with a strategic supply.

The CHAIRMAN. We cannot tell the government to go and negotiate for this, and the foreign country would not have access to a salt dome. You are the one who would be able to do the negotiation.

Mr. STEWARD. And we would be happy to do that.

The CHAIRMAN. What we need to know is what laws need to be changed. If we report a bill out here in June and it relates to the strategic petroleum reserve and you want to be able to do the things you have said, we want to be sure that the present law does

not prohibit that, or accommodates what you want to do. Otherwise, you may be frozen out of this thing.

What you say makes very good sense. It would be a very good deal for the government. The government ought to accept it because our interest is an insurance policy.

Mr. STEWARD. The government would never purchase the oil—well, they might have to purchase the oil for a brief period of time at the time of the crises, but actually your refineries are going to be buying the oil. They will be paying the market price once the option is triggered. It is completely different from the current program of purchasing the oil. In this case the government only pays a small rental fee of a year, and at the time they trigger the option and take the oil from the ground, the refineries are going to be standing right behind them asking for the oil, and that would all transpire at the same price.

To carry this maybe to its illogical extreme, I could envision, if you could put this in place, something attractive to our government and to a foreign government that over time you might want to sell your strategic reserves and fill the reserves with this leased oil. You could get billions of dollars back for the oil you already have in the ground. That would assume a fast fill rate because you are not going to want to drawdown your supply. This really takes all of the strain off of the budget.

The CHAIRMAN. I do not know whether you are going to be able to get this foreign country deal done, but I think you could get it done domestically. The proposal is rather straight forward. You enter into an arrangement with the United States whereby for a period of, for example, ten years they would have first call on the oil to pay at market price. In the meantime they pay you a certain designated amount per year. As far as you are concerned, you would go to the bond market and present a security that paid x percent interest per year based upon your cost minus whatever it is that this speculative factor would be attractive in the market. Someone would be able to get, pick a figure, five percent a year return which may be a little less than the bill rate, but they are guaranteed at least that. Then they know if it is drawn down during this period of ten years they get the market price, which if it is drawn down they know it would be higher. At the end of ten years they get the market price, whatever it is.

It would be an attractive security, it seems to me. In order to be able to do that we may need to change some laws. We need to know from your attorneys what laws need to be changed, if any, to accommodate that.

Mr. STEWARD. We had not envisioned being the middleman on that process, but we will be happy to look at that.

The CHAIRMAN. It seems to me you have a great asset there in the salt domes. You know how to do it. You can move as you——

Mr. STEWARD. We drill, transport, market. That is our daily business.

The CHAIRMAN. It looks to me like a great opportunity for both you and the country. You can do it cheaper than they can do it and you can provide a service we need. Senator McClure.

Senator MCCLURE. Thank you. Mr. Steward, I am very intrigued by the notion and I refer to pages 35 and 36 of the report to which

you made reference which give the baseline cost data on the construction of storage facilities, new salt dome site development as it appears on page 35 of that report. It is $5.00 to $7.50. That is the range that the Department puts on it. If you look at page 36, you get the total project development cost on table V–2 of an additional 250 million barrels, and you get total project cost for an SPR expansion on the Gulf Coast site only of 1,287,000 to 1,625,000,000.

You made estimates that are less than half that.

Mr. STEWARD. Yes, sir.

Senator MCCLURE. Does that include site value in your estimates, or is that just construction costs?

Mr. STEWARD. That would be all costs. We would probably expect some nominal site value. But my point on the site value is we already own the dome, so we don't have to go purchase that. And we would not expect much return on that.

Senator MCCLURE. The site value would be not a capital cost, but a rental cost?

Mr. STEWARD. It would not be a capital cost, and since it is not a capital cost it would not be like we had to borrow the money and continue to pay interest on that money for years to come.

Senator MCCLURE. I might put it in the alternative. It would be whatever the deal was that could be worked out.

Mr. STEWARD. Yes, sir.

Senator MCCLURE. Whether a site value or rental value.

Mr. STEWARD. Right.

Senator MCCLURE. In your estimate of cost you did not include site value as part of your estimate of cost?

Mr. STEWARD. No, just a nominal value.

Senator MCCLURE. With respect to whether or not it is within an OPEC quota, you know those OPEC members cheat more than that anyhow.

Mr. STEWARD. Yes, sir. That is exactly our position on that. This would certainly be in the gray zone because they would not have sold the oil. It is a little bit different than if, say, Saudi Arabia produced the oil and moved it into an above-ground facility in Saudi Arabia, which they have the right to do right now, and just hold it for future deliveries.

Senator MCCLURE. As a matter of fact, they did that both onshore and offshore storage.

Mr. STEWARD. That is correct.

Senator MCCLURE. They did an awful lot of offshore storage.

Mr. STEWARD. The only thing different here is they are just putting it in a container in the ground within this country, but it still would be in a foreign free trade zone, and it would not be sold to anybody until such time as the option was triggered. So it would still belong to Saudi Arabia.

Senator MCCLURE. I would assume that the costs could be and might be substantially effected by whether or not that was a taxable asset.

Mr. STEWARD. That is correct. That is why it would need to be in a free trade zone.

Senator MCCLURE. You mentioned that. Or at least the cost of the program would depend upon whether or not that was a taxable

asset and, therefore, have cost consequences on an annual basis pending withdrawal.

Mr. STEWARD. Yes, sir. There are free trade zones in existence, so this would now be plowing new ground for the establishment of a free trade zone. It would just have to be one set up for this specific purpose.

Senator MCCLURE. It would seem to me that the reluctance of an OPEC member, whoever it might be, or a non-OPEC member, a foreign producer who had oil that they might be willing to commit, that is just a matter of their own individual judgment.

Mr. STEWARD. Yes, sir.

Senator MCCLURE. I would assume that we would not know until we tried.

Mr. STEWARD. That is correct. We would like to try.

Senator MCCLURE. That is a little of what I had in mind a moment ago when I was talking to the previous witnesses about whether or not we ought to try a pilot program, see whether or not it will work. I do not know that we know if it will work until we try. What you have suggested is a very innovative program. I certainly am interested in it. I share with the Chairman the desire to explore further its potential.

I would assume from your description that the government would have no speculative value in the oil. The speculative value would be in the hands of the owner of the oil.

Mr. STEWARD. That is correct, because the oil might simply briefly pass through the hands of the government, but it would be going directly into the hands of the refiner as it comes out of the ground.

Senator MCCLURE. And again, that would depend upon the contractual arrangement that might be derived at.

Mr. STEWARD. That is correct.

Senator MCCLURE. It might never become government oil at all. The government would simply authorize as storage and control the events and the manner under which it would be distributed.

Mr. STEWARD. Yes, sir. It could be auctioned, as I believe the current plan is, to auction the strategic reserve that is already in the ground.

Senator MCCLURE. And the government would only control the process without owning the oil.

Mr. STEWARD. That is correct. To me this really gets the government out of the financing business of having to buy this oil, hold it in the ground for all these years. Admittedly, you have to pay a rental fee, but we are talking about a completely different process here.

Senator MCCLURE. And the government would pay the rental fee on the site.

Mr. STEWARD. And for having a call on the oil itself, yes, sir.

Senator MCCLURE. Thank you very much. I appreciate your testimony.

The CHAIRMAN. Thank you very much, gentlemen. I hope you can get this thing put together quickly. I do not see why the DOE is not knocking on your door and you on their door because this is—I do not see any flaws in it at this point. I see that——

Mr. STEWARD. We are excited about it.

The CHAIRMAN. I hope you can put it together. Thank you very much.

Next we have a distinguished panel, a friend of long-standing, John Lichtblau, president of the Petroleum Industry Research Foundation; and Dr. Arnold Safer who is president of The Energy Futures Group. Both of them are great experts in this area, and I look forward very much to their advice on this.

STATEMENT OF JOHN H. LICHTBLAU, PRESIDENT, PETROLEUM INDUSTRY RESEARCH FOUNDATION, INC.

Mr. LICHTBLAU. Thank you very much for inviting me to this hearing. I will briefly summarize my statement. I would like to say I believe all the proposals contained in S.694 are clearly in the national interest and in some form should be adopted.

The proposal to raise the SPR from 750 million to a billion barrels is clearly a desirable national security measure. There is a considerable cost attached to it, but cost considerations are, of course, not the only factor that should decide whether or not we do it while it is important.

What we can see is as a share of world imports, U.S. oil imports have steadily risen since 1985. It was 21 percent of world imports in 1985, it was 24 percent in 1988. It is now maybe 26 or 27 percent. So as a share of world oil trade our imports are rising faster. Therefore, it is necessary to keep raising the SPR as a protective device against a disruption.

Of course it has been pointed out, as a ratio of our imports on a day basis, our strategic petroleum reserve is actually declining. It was 96 days in 1984. It rose to 115 days in 1985, and then has dropped every year, 88 days in 1988, and this year so far it is down to 82 days.

Under the International Energy Agreement we are suppose to have commercial and strategic stocks equal to 90 day of net imports. We have substantially more because we have a billion barrels of oil stocks. Maybe 80 to 90 percent of these billion barrels of commercial oil stocks are not available for the trade because they have to remain within the system. Therefore, we cannot say that the bulk of our commercial stock is readily available.

It is, therefore, desirable I think to gradually apply the IEA standards of the stock volume equal to 90 percent of net imports to SPR stocks only. This has not been done. If it had been done, we would be somewhat below the 90 level.

By 1995 the DOE projects a 9.5 million barrels a day import. This would require an SPR of 855 million barrels by then. That volume could be obtained with a fill rate of 122,000 barrels a day for the next six and a half years, or about twice the size of SPR fill rate so far in 1989. It would still be much below the 1981-84 fill rate when the price of oil was, of course, substantially higher.

For the year 2000 the DOE base case projects a net import volume of 10.5 million a day which would require an SPR of almost a billion barrels by then. If the SPR is to be equivalent to 90 days of net imports and if we accepted DOE's base case, we would need authorization to raise the SPR to about 850, 870 million barrels by 1995 and to almost a billion barrels by the year 2000.

As SPR is expanded there are several reasons to consider a modest product reserve located in consuming countries. Regionally stored products can be put into the market more quickly providing a buffer to calm the market while the crude reserve is activated. I think a gasoline reserve on the West Coast, for instance, would have mitigated some of the supply concerns following the Alaskan oil spill.

Another proposal in S. 694 would introduce a highly desirable flexibility into the utilization of the SPR at the very beginning of an oil supply emergency by permitting SPR oil in transit to be sold directly into the market. In this connection I would like to suggest a further measure to speed up the first use of the SPR in a crises. At present, perhaps 30 days would pass between the President's declaration of an emergency and arrival of first supply of crude at user fineries. Since the President is unlikely to declare an emergency at the very first sign of a supply disruption, the time lapse could be considerably longer. The delay could be reduced if the Secretary of Energy or a cabinet task force headed by him were authorized to activate the SPR for a limited period, say up to 30 days, without the Presidential finding that a national energy emergency exists.

This could also prevent the psychological shock effect on the market of the Presidential declaration. Above all, it would permit limited use of the SPR in a sub-crises situation. The recent Alaskan oil spill could easily have developed into such a sub-crises if Alaska's entire 2 million barrels a day product had been shut in for, say, a month. In that case quick access to some SPR oil, particularly from supplies at sea, could have prevented a regional panic with national reverberations. Yet, the President may well have hesitated to declare a national energy emergency because of a variety of foreign and domestic policy considerations. Thus, limited SPR used during a sub-crises decided at sub-Presidential level could possibly avoid a full scale crises.

Regarding alternative financing for the SPR, in principle I believe the SPR should continue to be funded out of general federal sources. The SPR is clearly a national security measure. It does not specifically benefit the oil industry. It does effect our military strategy, our diplomacy, and our trade policy, so it should be viewed as a national security expenditure and continue to be funded accordingly

If budgetary restraints require alternative financing to fund the accelerated fill rate, the proposed sale of the naval petroleum reserve would seem an acceptable measure if it can be demonstrated that the government would likely generate more funds by selling to NPR than by collecting royalty on the production.

Several alternative funding proposals would remove the cost for the accelerated oil fill rate from the general budget and finance it from special government bonds. In the short run this would clearly reduce the call on the federal budget for this purpose. However, since the SPR does not generate any funds as long as there is no supply crises, the interest payments on the bonds and the funds for their redemption at maturity would eventually have to come out of general revenues.

Another alternative means of funding the higher fill rate might involve foreign suppliers, and this was discussed at length by the Louisiana people. I thought I would be the first one to mention it.

Most major producing countries in the OPEC group have substantial, readily available excess producing capacity which is not utilized under the OPEC production quota agreement. However, if any of these countries were to supply oil for the SPR out of their unutilized excess capacity, it would arguably not be a violation of the intend of the OPEC quota agreement since the oil would not go into the market but would remain in controlled, non-commercial storage until a supply crises of some visible magnitude develops and the oil is needed to ease the shortage.

For several OPEC countries approved and probably oil reserves of such magnitude that the present day cash value of their marginal barrel of oil reserves is very low, close to zero. It might, therefore, be in these countries economic interest to sell or lease this oil to the SPR at prices or fees which have no apparent relation to the current market values of their crude oil. If they sell the oil, they will earn a current positive cash flow from the transaction as long as the price is above the actual production and other direct costs. If the U.S. Government were to lease incremental SPR oil from these OPEC suppliers for storage in our facilities, the annual cash cost might be even lower since the leasing fee paid to the supplier would likely be less than the purchase price of the oil under the above-described conditions.

A primary contract clause would specify that the oil is under U.S. custody and control, although title could formally remain with the supplier.

The commonality of interest between buyer and seller in this case is based on the assumption that the U.S. Government wishes to procure incremental volumes of crude oil for non-commercial purposes and cannot pay the commercial market price for these incremental volumes.

The supplier, on the other hand, should be interested in providing oil at a profit from his unused surplus which would otherwise remain in the ground and no money at all for a very long time. Thank you very much, Mr. Chairman.

The CHAIRMAN. Thank you very much, Mr. Lichtblau.

[The prepared statement of Mr. Lichtblau follows:]

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EXPANDING AND FUNDING THE STRATEGIC PETROLEUM RESERVE

Statement by

JOHN H. LICHTBLAU

Before the

Committee on Energy and Natural Resources

U.S. Senate

May 4, 1989

Thank you for inviting me to participate in your Committee's hearing on proposed legislation regarding the Strategic Petroleum Reserve (SPR).

I. S. 694

Senate Bill 694 which is the subject of today's hearing contains three features: (1) extending the authority to operate and fill the SPR for 5 years to June 30, 1994; (2) expanding the SPR from its current ceiling of 750 million to 1 billion barrels and (3) permitting some pre-drawdown diversion of SPR oil into the market during an oil emergency. All three of these proposals are clearly in the national interest and should, in principle, be adopted.

A. Extend SPR Authority

The first proposal requires little comment. Filling the SPR and keeping it in a perpetual state of readiness is currently the only activist U.S. energy policy which deals directly with the national security aspect of our rapidly rising oil import dependency. The high probability that this rising trend which started in 1986 will continue well into the 1990's enhances the potential importance of the SPR as our first and foremost protective device against the consequences of a major oil supply disruption for whatever reason.

B. Move to One Billion Barrels

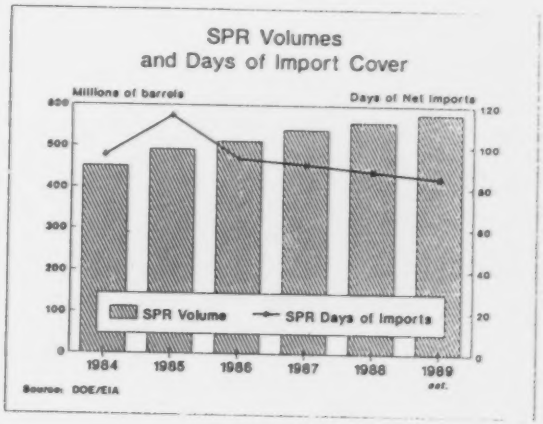
The second proposal, to raise the SPR's ceiling from 750 million bbls to 1 billion bbls, is also, at least directionally, a desirable national security measure. However, there is a considerable cost attached to this expansion. The DOE has estimated it at over $6 billion if oil prices remain around $18/bbl in real dollars to the year 2000. If one assumes, not unreasonably, a somewhat higher average real price during this period, the cost could be considerably more.

Cost considerations are of course important in evaluating the SPR expansion proposal but are not *per se* an argument against it, if the expansion is clearly in the national interest. Whether this is the case, and if so, how much the SPR ceiling should be raised depends primarily on our oil import volume and its share of total world oil trade. In 1985 our gross imports of 5.1 million B/D represented about 21% of world oil imports. Thus, assuming that a foreign oil disruption in that year would have been equally shared among all importers, 21% of the lost volume would have been borne by the U.S. In 1987 the U.S. share of world imports had risen to 24%. No final figures are available on world oil trade in 1988 but the 500,000 B/D increase in U.S. oil imports undoubtedly raised our share of

world oil trade above the 25% level. Thus, our potential volumetric loss of imports from any foreign disruption is steadily rising. Our SPR must therefore be steadily raised to cover the growing potential loss from an import disruption.

1. Tie SPR Volumes to a 90-Day Import Level

As a ratio of our imports the SPR has moved in just the opposite direction. In 1984 our year-end SPR volume was equal to 96 days of net imports during that year. In 1985, as imports declined, the ratio rose to 115 days. Since then it has been declining each year. In 1988 it was 88 days and so far in 1989 the SPR level was equal to only 82 days of net imports (see figure).



Under the International Energy Agency Agreement, each member country is committed to maintain total commercial and strategic stock levels equal to 90 days of its net imports. The U.S. level is of course much higher since our commercial stocks are about 1 billion barrels. However, it is sometimes overlooked that in the U.S. 80-90% of these commercial stocks are not available for consumption but must remain in the distribution, refining and marketing system. For instance, the "minimum operating" stock level for crude oil has been estimated by the National Petroleum Council in a new study at 300 million barrels. The end-March API data show total commercial crude stocks at 326 million bbls, or just 9% above the required minimum operating level. In the case of gasoline, stocks of 231 million bbls were just 13% above the minimum operating level. The recent Alaskan experience has demonstrated the limitation of regular commercial stocks to cope with even relatively small disruptions.

It may therefore be desirable for the U.S. to gradually apply the IEA criterion of a stock volume equal to 90 days of net imports to SPR stocks only. Under this criterion the U.S. would currently be somewhat below the 90-day level, as pointed out before. By 1995 the DOE projects a net import level of 9.5 million B/D in its Base Case. This would require an SPR of 855 million barrels (9.5 x 90). That volume could be obtained with a fill rate of 122,000 B/D for the next 6 1/2 years, about twice the rate (63,000 B/D) so far in calendar 1989 but still much below the 1981-84 fill rate when the price of oil was substantially higher than now. Under the proposed fill rate, the SPR would move gradually towards the 90-day net import target by 1995. The drawdown and distribution capability of

the SPR must of course also be raised during this period. However, the currently planned increase to 4.5 million B/D by 1992 would appear to be sufficient for any realistic eventuality, at least during the first half of the 1990's. Under the proposed higher volumes the maximum drawdown rate could presumably be maintained for a longer period. For the year 2000 the DOE Base Case projects a net import volume of 10.5 million B/D which would require an SPR of almost 1 billion bbls by then.

Thus, if the SPR is to be equivalent to 90 days of net imports and if we accept the DOE's Base Case projection for net imports, we would need authorization to raise the SPR to 850-875 million bbls by 1995 and to 950 million - 1 billion bbls by 2000. I recognize, of course, that the DOE forecast is nothing more than a mid-point estimate which could well be wrong in either direction. But it does provide useful guidance for the expansion of the SPR over the next 10 years.

2. Consider Product Reserves

As the SPR is expanded, there are several reasons to consider a modest product reserve located in consuming markets. Regionally stored products can be put in the market more quickly, providing a buffer to calm the market while the crude reserve is activated. A gasoline reserve on the West Coast, for instance, would have mitigated some of the supply concerns following the Alaskan oil spill. Some regions, like the East Coast, are much more dependent than the rest of the nation on imports. Finally, as capacity utilization has grown, particularly in the downstream conversion units, U.S. refiners no longer have the excess capacity to make up a significant shortfall in the now necessary supply of imported light product. Although the cost of regional light product storage is higher than salt cavern crude oil storage, the total necessary volume is low, so the total cost is as well. Almost 500 thousand B/D of residual fuel oil comes from foreign sources to the East Coast, mostly to utilities. The U.S. should also consider a reserve for resid, since U.S. refiners are unlikely to be able to provide substitute supplies which comply with increasingly stringent environmental regulations.

C. Utilize the SPR Early

The third proposal in S. 694 would introduce a highly desirable flexibility into the utilization of the SPR at the very beginning of an oil supply emergency when it is most needed, by permitting SPR oil in transit at the time to be sold directly into the market instead of requiring it to be first unloaded into SPR facilities.

In this connection, I would like to suggest further measures to speed up the first use of the SPR in a crisis. At present perhaps 30 days would pass between the President's declaration of an energy emergency and arrival of the first supply of SPR crude at U.S.

refineries. And since the President is unlikely to declare an energy emergency at the first sign of a supply disruption, the time lapse between the actual event and the first physical contribution from the SPR could be considerably longer. The delay could be reduced if the Secretary of Energy, or a Cabinet Task Force headed by him, were authorized to activate the SPR for a limited period, say up to 30 days, without a Presidential finding that a national energy emergency exists. This could also prevent the psychological shock effect on the market of a Presidential declaration of an energy emergency. Above all, it would permit limited use of the SPR in sub-crisis situations.

The recent Alaskan oil spill could easily have developed into such a sub-crisis. The spill reduced Alaskan production for only 12 days and by only about half of Alaska's production during that period. Because of the limited duration and relatively small volume loss there was no need to bring the SPR into play. But had Alaska's entire 2 million B/D production been shut in for, say, a month, quick access to some SPR oil, particularly from supplies at sea, could have prevented a regional panic with national reverberations. Yet, the President may well have hesitated to declare a national energy emergency because of a variety of foreign and domestic policy considerations. Thus, an approach under which limited SPR use during a sub-crisis disruption is decided at sub-Presidential levels could possibly avoid a full scale crisis. Let us remember that in 1979 the real supply crisis was not caused by the relatively brief disruption of Iranian oil supplies but by the panic-driven global hoarding of oil stocks long after Iran had restored production to two-thirds of its pre-revolution level.

II. ALTERNATIVE FINANCING MECHANISMS

This Committee has also asked for comments on alternative financing of the SPR. In principle, I believe the SPR should continue to be funded out of general federal sources. The SPR is clearly a national security measure. It does not specifically benefit the oil industry and while it benefits oil consumers by protecting them against physical shortages and excessive price increases in case of a disruption, its benefits go far beyond this direct function. It affects our military strategy, our diplomacy and our trade policy by buying us time and giving us a much higher degree of operating flexibility to deal with a threatening or actual oil disruption than if we had only commercial oil stocks. Thus, the SPR should be viewed as a national security expenditure and continue to be funded accordingly.

If budgetary constraints require alternative financing to fund an accelerated fill rate, the proposed sale of the U.S. Naval Petroleum Reserves (NPR) would seem an acceptable measure. The NPR's have no strategic value other than those of any other operating domestic oil field. Hence, if it can be demonstrated that the government would likely generate more funds by selling the NPR's than by collecting royalties on this operations, it should probably do so and earmark the funds obtained for *incremental* purchases of SPR oil.

Several alternative funding proposals would remove the cost for the accelerated oil fill rate from the general budget and finance it through special government bonds. In the short run this would clearly reduce the call on the federal budget for this purpose. However, since the SPR does not generate any funds as long as there is no supply crisis, the interest payments on the bonds and the funds for their redemption at maturity would eventually have to come out of general revenues. In essence, this form of financing would therefore shift the incremental cost of filling the SPR from the current federal budget to the future national debt.

Another alternative means of funding the higher fill rate to meet the proposed higher SPR ceiling might involve foreign suppliers. Most major producing countries in the OPEC group have substantial readily available excess producing capacity which is not utilized under the OPEC production quota agreement. However, if any of these countries were to supply oil for the SPR out of their unutilized excess capacity, it would arguably not be a violation of the intent of the OPEC quota agreement, since the oil would not go into the market but would remain in controlled non-commercial storage until a supply crisis of some visible magnitude develops and the oil is needed to ease the shortage. Since several OPEC countries have sufficient proved and probable oil reserves to maintain any economically and technically realistic production level for 50-150 years, the present-day cash value of their marginal barrel of oil reserve is very low. It might therefore be in these countries' economic interest to sell or lease this oil to the SPR at prices or fees which have no apparent relation to the current market values for their crude oil. If they *sell* the oil they will earn a current positive cash flow from the transaction as long as the price is perceptibly above their actual production and other direct costs. Thus, they could sell their oil profitably to the SPR substantially below current market value without endangering the market price. There is, however, a question whether OPEC would acquiesce to this type of sale outside the quota.

If the U.S. government were to *lease* incremental SPR oil from these OPEC suppliers, for storage in our facilities, the annual cash cost might be even lower, since the leasing fee paid to the supplier would likely be less than the purchase price of the oil under the above described conditions. A primary contract clause would specify that the oil is under U.S. custody and control, although title could formally remain with the supplier. The term of the lease would have to be negotiated as would the ownership of the oil after expiration of the leasing contract. Aspects such as the price on drawdown also require consideration and clarification.

The communality of interest between buyer and seller in this case is based on the assumption that the U.S. government wishes to procure incremental volumes of crude oil for non-commercial purposes and cannot pay the commercial market price for these incremental volumes. The supplier, on the other hand, should be interested in providing oil at a profit from his unused surplus which would otherwise remain in the ground and earn no money at all for a very long time.

The CHAIRMAN. Dr. Safer.

STATEMENT OF DR. ARNOLD E. SAFER, PRESIDENT, THE ENERGY FUTURES GROUP, INC.

Dr. SAFER. Mr. Chairman, members of the committee, I appreciate the opportunity to present my views on these alternative financing for the SPR. November of 1988 I completed a report as a contract to the Department of Energy on this subject. I have a copy of this report which has been distributed to interested parties. The opinions expressed in that report, however, and my testimony today, are my own and not necessarily reflecting those of the Department of Energy.

The purpose of the report was to analyze the cost benefit attributes associated with alternative concepts for financing incremental SPR fill. The current oil market surplus offers an opportunity to acquire relatively low cost oil so the timing is now advantageous to increase current rates of oil fill.

Moreover, rising imports will require a larger reserve to maintain the same degree of protection from a foreign supply disruption. Nevertheless, continuing federal budget pressures have prevented the Congress from structuring a long-term financing vehicle for total SPR program authorization.

In total, we identified 26 SPR financing concepts plus numerous additional variations. These were reduced to the following six generic categories plus a seventh catch-all, and I will just list them. Off-budget financing through the federal financing bank, private sector investor/lessor participation off-budget, new taxes or user fees, dedicated NPR receipts, private sector reserves, mandatory contributions, and a number of other categories which we could not actually capture such as option sales, commercial warehouses, and international funding.

The private sector reserve and mandatory SPR contributions are unlikely to find significant support while options sales and commercial warehousing concepts will not likely generate significant revenues.

In addition, the financing concepts dealing with international oil and financial institutions have not been examined in sufficient detail to assess their feasibility. For example, exchanging the discounted debt of an oil exporting less developed country for SPR oil could be attractive, or the large Japanese balance of payment surplus might be used in a special program for joint SPR funding.

In terms of budgetary ease and immediate results, the two best alternatives seem to be utilizing the federal financing bank or dedicating the NPR revenues. First a certificate of beneficial interest in the SPR sold to the federal financing bank could be a viable intergovernmental way of keeping the SPR fill cost off-budget. It would put SPR financing into the category of an asset transfer, something you have stressed here today, dollars for oil, rather than keeping it as an expense item. Treasury borrowing would still be needed but perhaps at a reduced interest cost since short-term bills could be used in place of longer term bonds.

Second, dedicated NPR revenues to SPR fill might improve operational decisions making the SPR and NPR programs by linking them together for greater management efficiency.

In the event that the current NPR divestiture proposal is not approved by the Congress, long-term dedication of NPR revenue to SPR fill might be an acceptable alternative.

On the other hand, these two approaches do not generate any new sources of revenue. To do so, the choices between one of private sector off budget financing alternatives, index bonds or leasing versus dedicated taxation or user fees, the latter approach would effectively eliminate the impact in the budget deficit through an additional sources of revenue, while the investor, lender, or lessor approaches could reduce or eliminate up-front oil acquisition costs in return for the government foregoing all or a portion of the potential appreciation in the value of the oil.

Now, the political acceptability of SPR dedicated taxes or user fees depends importantly on their magnitude. For example, a dedicated tax on gasoline of less than a cent a gallon, actually around 7/10 of a gallon, would raise enough money to fill the SPR at 100,000 barrels a day for the next five years.

User fees or dedicated taxes are administratively simply with ample precedent. They may, however, increase consumer prices and would probably encounter considerable political difficulty.

So, a list now of the private sector financing proposals and their important contractual terms actually is given in the table which is in my testimony. We reviewed five or six of these very specific ones, and I do not think I want to go through the entire table, but it is patently clear what that is.

The CHAIRMAN. We have your report.

Dr. SAFER. So, for reasons detailed in this report, I concluded that the intermediate term zero coupon index bond or long-term leasing would be the best alternatives.

These financing proposals are distinguished by the central feature of borrowing money versus borrowing oil. Borrowing oil is a new concept, but has several advantages. No contingent liability is created, and the imputed interest cost saving could be substantial.

The most difficult problem with any short-term oil leasing proposal is renewal at maturity since the lessor cannot physically take his oil out of the SPR if no drawdown; that is, no disruption were to occur.

As a result, I would recommend that oil leasing programs be long term, say 25 years, as opposed to less.

The CHAIRMAN. Why could you not physically take the oil out?

Dr. SAFER. You could, but the costs would be large, and the opinion and the approach of the Department of Energy is once they have it in their reserve, it is dedicated to the purpose which is the protection and insurance of the United States.

You could buy oil on the high seas and give it to the lessor, but physically take it out of the salt dome once it is there——

The CHAIRMAN. You do not necessarily have to physically take it out. It would be the obligation of the government under a lease at the end of five or ten years to give X barrels of oil to the bondholders, and they would have the option of either taking it out of the

ground or giving it from some other source on the market or wherever.

But the idea is to let the bondholder speculate on that price of oil so that at the end he can get—I mean, it is like the old gold certificates. You do not have to actually go up to the window and get your gold as long as your value is represented, is that not right?

Dr. SAFER. That is clearly true, but it is a question at whose option. It would have to be clearly stated in the lease terms between the government as lessee and the other party as lessor exactly what those terms would be up front, and it is not clear to me that it is all that easy to do.

There are many different alternatives and tradeoffs between the two, and I do distinguish between borrowing money versus borrowing oil.

So, as I say in the testimony, borrowing money, on the other hand, is not a new concept to the federal government. In this regard, the intermediate term index bond would probably be preferable. Some ceiling on the price appreciation in the event of drawdown would be needed I think as it has been stated, to mitigate charges of investor profiteering so some of the interest cost savings might be reduced.

The CHAIRMAN. Let us examine that. If you are going to get less than the full cost of the cost of money plus the cost of doing the oil, you have got to give it to the investor on their right to speculate, do you not?

Dr. SAFER. Yes, I think you can bound those, though. You can put some practical numbers around it.

The CHAIRMAN. Why do that because by putting those practical numbers, you are going to have to pay more. The interest in the government, it seems to me, is not to speculate itself because by putting limits, it is, in fact—wants to be a partner in that speculation.

Dr. SAFER. I think it is a question of political acceptability. I think there may be others in the Congress who would very strongly view the government's or private sector making—doubling, tripling their money on an investment like that while the country was running out of gasoline—might view that with some difficulty.

The CHAIRMAN. They might not like it if it happened—if that happened at that time.

But the idea right now, if somebody is leasing some oil to us and being able to sell it at the market price, it does not offend me.

Dr. SAFER. It is a question of at the time—let me give you the benefit, perhaps—let me move on—of some numbers that we actually put together, because I think it comes down to what the numbers might look like. So, I put together on this page 6 of my testimony—hypothetical, but I still believe a realistic economic model.

If we looked at the 25-year budget authority for the assumed 12-year fill program, we start at $15 a barrel, we assume prices go up by 6 percent a year, and we want to do 100,000 barrels a day for 12 years, which basically gets us to about a billion barrels. If we look at fully funded SPR fill; that is, just paying the price, whatever the oil costs the government pays for it, it is $9.1 billion.

If the government then goes and says all right, I will borrow the money to pay for the oil, but I will pay the interest on that borrowing from general revenues, the costs would go up to $24.5 billion.

If the government went out and borrowed the money——

The CHAIRMAN. Where is this located?

Dr. SAFER. Page 6 of the testimony. Maybe it is page 5. It is a table. Excuse me, it is page 4. I apologize. My secretary double spaced mine and singled spaced the rest. It is page 4. That is the chart. The table is right before it.

The CHAIRMAN. It seems to me that there is no way to compare the lease with the government until you know what the relative cost to private industry and the government are for building the facilities and then until you know what the market will give you for the right to speculate.

Dr. SAFER. That is true, and we can only make some assumptions which I consider to be reasonable, given current financial market conditions. I agree with you entirely. You do not know until you go to market.

But if you just follow through with the example, if the government were then to go borrow the money and also borrow the interest, it would cost it $47.7, $48 billion.

On the other hand, a zero coupon index bond which had a minimum yield of 7 percent and we assume capped at 15 percent per annum, which is a fair yield to an investor, but it should be—oil either be drawn down or go to maturity on the bond, its max would be 15, its minimum would be 7 percent per annum. That would cost the government $33 billion, and that is roughly equivalent to a short-term lease with an annual lease cost of 3 percent, but there is no cap.

Finally, the long-term lease, which is what I think we are sort of driving at here and what I consider to be a relatively high rate of interest, 12 percent, would cost the government $20 over this period of time.

Now, if oil prices were to increase by 6 percent a year from $15 to whatever that is in 25 years, the value of the oil would be $27.8 billion.

The CHAIRMAN. It seems to me that 12 percent is extraordinarily high. We just heard that LL&E would do it for 1 percent, and I think there was another proposal that came in. I do not want to use the name. I know you looked at that proposal, but they came in at the treasury bond rate.

Dr. SAFER. And, in fact, I would argue that that number can be and should be negotiated down very sharply from the treasury bill rate. I think that is a tradeoff.

Let me comment, if I might, on the specific leasing proposals.

When I make the calculation that you give up with the long-term lease, it costs you $20.6 billion, but you do give up the value of the appreciated oil. That is what you were asking the folks from GAO about—you would give it up and so you could say the net costs of the long-term lease was $48 billion. I think that is what they did.

Now, I would argue that foregoing the potential appreciation, the government foregoing that in the event of drawdown, is probably a relatively small cost given the potential damage to the U.S. economy in the event of disruption. That is, having the extra barrels in

the SPR is the true goal, not making money for the U.S. government.

Second, the oil lessor might well accept an annual leasing feel well below the treasury's interest costs. For the lessor, the long-term lease arrangement with the U.S. government is excellent collateral for borrowing. The oil is in the U.S., so it is safe. Storage is managed by expert private and public sector technicians, and the oil is "rented" to the U.S. government to be sold only in the event of a supply disruption when presumably prices would rise significantly. That is very good collateral for a long-term loan, with the lease payments to the lessor basically funding that interest.

What I am saying is if you have a contract with the U.S. government; that is, the lessor has that. He can walk down to the bank and basically get somewhere between 25 to 75 percent of the value of the oil anyway.

[The prepared statement of Dr. Safer follows:]

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Dr. Arnold E. Safer
President

TESTIMONY

FOR THE

SENATE ENERGY COMMITEE

May 4, 1989

Mr. Chairman and Members of the Committee:

I appreciate the opportunity to present my views on alternative financing for the Strategic Petroleum Reserve (SPR). In November of 1988, I completed a report as a contractor to the Department of Energy on this subject. The opinions expressed in that report, however, and my testimony today, are my own and do not necessarily reflect those of the Department of Energy.

The purpose of this report was to analyze the cost/benefit attributes associated with alternative concepts for financing incremental SPR fill. The current oil market surplus offers an opportunity to acquire relatively low cost oil, so that the timing is now advantageous to increase current rates of oil fill. Moreover, rising oil imports will require a larger reserve to maintain the same degree of protection from a foreign supply disruption. Nevertheless, continuing federal budget pressures have prevented the Congress from structuring a long term financing vehicle for total SPR program authorization.

In total, we identified 26 specific SPR financing concepts, plus numerous additional variations. These were reduced to the following 6 generic categories, plus a 7th "catch-all" category. These categories are listed below:

1. Off-Budget Funding through the Federal Financing Bank
2. Private Sector Investor/Lessor Participation (Off-Budget)
3. New Taxes or User Fees
4. Dedicated NPR Receipts
5. Private Sector Reserves
6. Mandatory Contributions
7. Other:
   - Option Sales
   - Commercial Warehouse
   - International Funding

The private sector reserve and mandatory SPR contributions are unlikely to find significant support, while the option sales and commercial warehousing concepts will not likely generate significant revenues. In addition, the financing concepts dealing

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with international oil and financial institutions have not been examined in sufficient detail to assess their feasibility. For example, exchanging the discounted debt of an oil exporting LDC for SPR oil could be attractive, or the large Japanese balance of payments surplus might be used in a special program for joint SPR funding.

In terms of budgetary ease and more immediate results, the two best alternatives seem to be utilizing the Federal Financing Bank or dedicating the NPR revenues. First, a Certificate of Beneficial Interest in the SPR sold to the Federal Financing Bank could be a viable inter-governmental way of keeping the SPR fill cost off-budget. It would put SPR financing into the category of an asset transfer ($'s for oil), rather than keeping it as an expense item. Treasury borrowing would still be needed, but at a reduced interest cost since short term bills could be used in place of longer term bonds. Second, dedicating NPR revenues to SPR fill might improve operational decision making for the SPR and NPR programs by linking them together for greater management efficiency. In the event that the current NPR divestiture proposal is not approved by the Congress, long term dedication of NPR revenues to SPR fill might be an acceptable alternative.

On the other hand, these two approaches do not generate any new sources of revenue. To do so, the choice is between one of the private sector off-budget financing alternatives (index bonds or leasing) versus dedicated taxation or user fees. The latter approach would effectively eliminate the impact on the budget deficit through an additional source of revenue, while the investor/lender approaches could reduce or eliminate up-front oil acquisition costs in return for the government foregoing all or a portion of the potential appreciation in the value of the oil.

The political acceptability of SPR dedicated taxes, or user fees, depends importantly on their magnitude. For example, a dedicated tax on gasoline of less than 1¢/gallon would raise enough money to fill the SPR at 100,000 B/D for the next five years. User fees, or dedicated taxes, are administratively simple with ample precedent. They may, however, increase consumer prices and encounter considerable political difficulty.

A list of some of the private sector financing proposals and their important contractual terms is given in the following table:

PRIVATE SECTOR FINANCING PROPOSALS:

CONTRACTUAL TERMS

	INTEREST COST/ RENTAL FEES	MATURITY	PAYMENT SCHEDULE	BENEFICIAL INTEREST	OIL OWNERSHIP
INDEXED BONDS DOE/EFG (Internal Discussions)	BID DISCOUNT FROM INTERMEDIATE TERM T'BOND YIELD AS FLOOR, OR OIL PRICE, WHICH-EVER IS HIGHER	7-12 YEARS	ZERO COUPON	INVESTOR, 15% CEILING, INVESTOR CALL ON REDEMPTION, USG CALL ON PRES. DECL.	USG
INDEXED BONDS PRINTON-KANE-1988	3% ANNUAL YIELD PLUS OIL PRICE APPRECIATION AT MATURITY, NOT LESS THAN PAR	30 YEARS	QUARTERLY OR SEMI-ANNUAL COUPON	INVESTOR, USG CALL ON PRESIDENTIAL DECLARATION	USG
PETROLEUM EQUITY CERTIFICATES GRAMM, 1981	NONE	10 YEARS WITH DOE BUY-BACK	NONE	INVESTOR, USG CALL ON PRESIDENTIAL DECLARATION	USG
TRUST RECEIPTS OMB, 1986	1/2 T'BOND RATE AS FLOOR, OR OIL PRICE, WHICH-EVER IS HIGHER	5 YEARS	ANNUAL COUPON	LENDER, USG CALL ON PRESIDENTIAL DECLARATION	LENDER
BANK LOAN BANKERS TRUST 1987-88	50 BASIS POINTS BELOW 5 YEAR T'BOND	5 YEARS	SEMI-ANNUAL INTEREST PLUS BALLOON REPAYMENT	USG, FLOOR ON FILL COST	USG
LEASE OIL 1987-88	T'BOND RATE (management fee equal to interest cost)	NOT SPECIFIED BUT PRESUMABLY VERY LONG TERM	PERIODIC (e.g., quarterly)	LESSOR, USG CALL ON PRESIDENTIAL DECLARATION	LESSOR

For reasons detailed in the report, I concluded that intermediate term, zero-coupon, index bonds or long term leasing would be the best alternatives. These financing proposals are distinguished by the central feature of borrowing money vs. borrowing oil. Borrowing oil is a new concept, but has several advantages. No contingent liability is created and the imputed interest cost savings could be substantial. The most difficult problem with any short term oil leasing proposal is renewal at maturity, since the lessor could not physically take his oil out of the SPR if no drawdown were to occur. As a result, I would recommend that oil leasing programs be very long term, say at least 25 years. In addition, longer term amortization of private sector storage facilities would reduce the annual lease costs.

Borrowing money on the other hand, is not a new concept to the federal government. In this regard the Intermediate Term Indexed Bond would be preferable. Some ceiling on the price appreciation, in the event of drawdown, would be needed to mitigate the charges of investor profiteering, so that some of that interest cost savings might be reduced. The refinancing issue is not a problem since a series of annual bond sales could be held as long as the SPR existed. It would become similar to any Treasury re-financing. The contingent liability problem does remain, however, raising the issue of increased long term budget authority. Using the existing SPR oil as partial collateral for these bonds might reduce the need for some of that increased budget authority.

The results of a hypothetical but still realistic economic model are shown in the table below (with graphic illustration attached):

Cumulative 25 Year Budget Authority For Assumed 12 Year Fill Program
($ billion)

(100,000 B/D at first year cost of $15/bbl.)

CASE A: (6% Per Year Oil Price Appreciation)

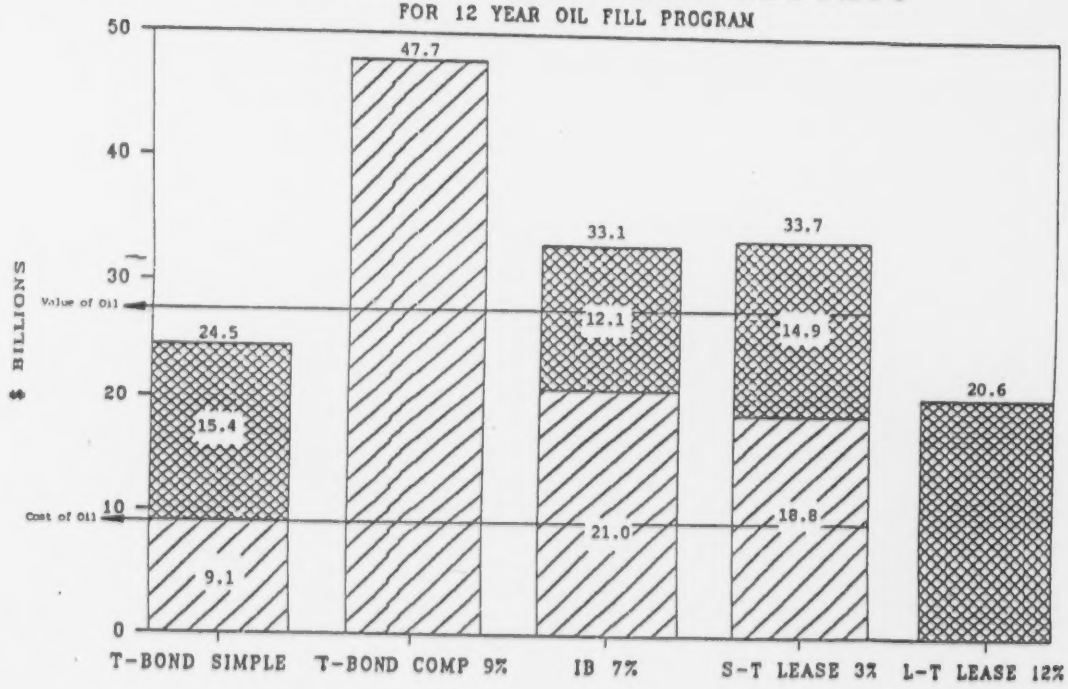
	Cost	Contingent Liability*
Fully Funded SPR fill	9.1	
Borrowing at 9% Simple Interest	24.5	
Borrowing at 9% Compound Interest	47.7	
Zero-Coupon Indexed bonds (7%)**	33.1	77.8
Short Term Lease (3%)**	33.7	83.3
Long Term Lease (12%)	20.6	
Value of Oil in Year 25:	27.8	73.9
Net Cost of Long Term Lease	48.4	

* Budget authority needed should oil prices escalate at 15% per year.

** For years 13-25, conventional 9% Treasury bonds are used to fund the outstanding debt, paying that interest out of general revenues.

CUMULATIVE 25 YEAR RESULTS

FOR 12 YEAR OIL FILL PROGRAM



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Conventional Treasury borrowing for incremental SPR fill, funding the associated interest cost out of general revenues, would be significantly cheaper than both intermediate term index bonds or short-term lease arrangements (i.e., $24.5 billion vs. $33-$34 billion). On the other hand, funding the associated interest with further borrowing, thereby compounding the interest cost, is significantly more expensive than index bonds or short term leasing (i.e., $47.7 billion vs. $33-$34 billion). The lowest cost alternative, from both the annual appropriations and long term budget authorization viewpoints, would appear to be long term leasing, but in contrast to the short term financing proposals, all of the price appreciation would be forgone by the USG, raising the net cost of long term leasing from $20.6 billion to $48.4 billion. As suggested, various permutations could be inserted to let the government partially share in that long term appreciation.

I have been asked to comment specifically on the leasing proposals. First, foregoing the potential appreciation in the event of drawdown may be a relatively small cost, given the potential damage to the U.S. economy in the event of a disruption. That is, having the extra barrels in the SPR is the true goal, not making money for the U.S. government.

Second, the oil lessor might well accept an annual leasing fee at a rate well below the Treasury's interest cost. For the lessor, the long term lease arrangement with the U.S. government is excellent collateral for borrowing. The oil is in the U.S., so it is "safe"; storage would be managed by expert private and public sector technicians; and the oil is "rented" to the U.S. government to be sold only in the event of a supply disruption when prices would rise significantly. That's reasonably good collateral for a long term loan, with the lease payments to the lessor funding his interest costs. Alternatively, the U.S. government could structure a lease which paid the lessor an annual rate equal to the Treasury's borrowing costs, but retained the option to buy the crude from the lessor at the price prevailing at the time the oil was delivered to the SPR. In both cases, the lessor could borrow anywhere from 25%-75% of the value of the leased oil, depending on storage costs and relative interest rates (government vs. private sector). The government could, in turn, reduce its on-going lease payment or increase its share of the potential price appreciation.

Finally, competitive bidding by potential lessors might be a very effective means of securing the oil lease contract at minimal cost to the government. This would pertain to the leasing of oil, not just storage facilities and should be structured in a manner where the two cost elements could be separately evaluated.

Thank you for the opportunity to make these comments and I would be happy to answer any of your questions.

The CHAIRMAN. Let me ask some questions if I may. I have read your statement.

The relative cost to the government, it seems clear to me, is based upon testing the market and testing the cost of private enterprise doing it versus the government. And the valuation of proposals, I think, has got to be done by DOE. What changes in law do we have to make in order to accommodate a lease arrangement?

Dr. SAFER. To the best of my knowledge from the people at DOE that I have talked to, you could go with a leasing or index bond proposal with no changes.

The CHAIRMAN. Do you agree with that, Mr. Lichtblau?

Mr. LICHTBLAU. In principle, yes.

One of the problems that I have is that this assumes the price increase would take place during a disruption. It is a very, very high risk. It may never materialize. The chances of another disruption where we actually need the SPR is pretty low. I would not want to put money on that.

I would more likely assume there was going to be a regular fundamental price increase over time and whatever oil is being bought now is likely to be worth $5, $8 more in real dollars five, or seven years from now because we see that trend beginning.

But to speculate on a crisis on the SPR drawdown of the crisis and of a very high price, I think the odds are very much against it.

Also, if the SPR works properly, it will immediately depress the price increase. That is its function. So, you have a contradiction there, somebody hoping for a price increase because of a disruption, the SPR being used to depress this price increase.

So there is—again, we come to the national security aspect—there really is not an investment tool. It is like a defense expenditure, like a piece of military equipment. You hope you will never use it.

The CHAIRMAN. I guess we would have to get some of the bond people, some of the finance houses to tell us how much that speculation in the event of a drawdown is worth.

Sometimes the pie in the sky speculation is worth more than the actual dollars are worth in what they do for these lotteries.

Mr. LICHTBLAU. Speculation. But, I mean, the underlying assumption that you will have some kind of a disruption every five, eight, ten, twelve years. And, therefore, if you hold out long enough, you are bound to make some money. I think it is a really questionable assumption.

The CHAIRMAN. It certainly is questionable. Why does the government want, in effect, to be a partner in that speculation by saying in the event the price of oil goes to $40 a barrel you cannot sell at more than $25 per barrel to us and then we will sell it, I take it, for $40 a barrel and get the $15 profit.

Mr. LICHTBLAU. I agree with you. But you should have the chance, if there is a price explosion, you should participate in it fully.

Dr. SAFER. Fully is the issue, and I think it is a question of risk sharing here to the extent they would be able to sell a bond with a cap on it and get a somewhat—pay a somewhat higher rate up front. That is my 7 percent versus 15.

You might go down to 2 percent up front, 3 as was proposed with letting the full-scale appreciation revert to the investor on any of these bonds. I think that is a question of just seeing what the market can take and what the risk sharing is like.

The CHAIRMAN. How about just a bond that said you get paid T bill rate minus one, two during—maybe you would have to have higher to compensate for the cost of storage, and then at the end of ten years you get the price of oil. You get it in lump sum.

Dr. SAFER. That will be fine. That is a bond, and the government still owns the oil. The government has not borrowed the money.

The CHAIRMAN. No, no, the government does not—the government would not own it.

Dr. SAFER. No analysis would distinguish between the government borrowing money under one of these unique index bond schemes with the rights to the appreciation all or partially going to that investor versus the leasing of oil where both the storage site and the oil itself is not the property of the U.S. government. It is, in fact, leased.

The CHAIRMAN. I am talking about the latter.

Dr. SAFER. But there is a difference in terms of rights and the contracts associated with it. You can easily refinance a bond in the marketplace. You make it liquid through this indexation and the processes that you have discussed.

I think a lease is something else. That is a contract between the federal government and an individual party.

And my only concern there, frankly, with the ability to sit down up front and write today renewal terms for 10 years from now since none of us really know what the state of the market is going to be 10 years from now and to suggest where could those be.

Well, either the DOE buys the oil in essence from the lessor at that time at the market or there is some provision made to renew that lease for another 10 years.

The CHAIRMAN. Why would you need that? Why could you not just have—I mean, the government can protect itself. We can have so many barrels in five years, so many at 10 years, so many at 15 years, and the lease expires at the end of five years, and then they work out a deal at market price to renew the lease.

Dr. SAFER. I just do not think you can leave it open-ended today. It has to be specified today what would happen at the end of the five years. Should no drawdown occur, would the government actually buy the oil at the market price from the lessor?

If that is the case, in the budgeting they are going to have to have that budget obligation or appropriation.

The CHAIRMAN. You would not have to do that. You just provide that the lease expires at the end of five years, and then you go in and you negotiate with the holders and you are saying let us renew this for five years at X dollars, and they say no, we want more. And, fine, you cannot get more. So you can sell your oil in the private market.

Now, do you have to actually pull it out of the reserve? No, the government can give you X barrels.

Dr. SAFER. From its purchases otherwise. But it would still cost the government money. And as I understand it from the good folks at the U.S. budget agencies, both Congressional and administra-

tion, OMB, you would, therefore, have to budget as an obligation the federal government buying that oil.

The CHAIRMAN. Not if you do not have the obligation to do so. The government can say the lease is over. So, the lease is over. It is your oil. It is your storage dome. It is Leeville, Louisiana. It is under the ownership of Louisiana Land and Exploration, for example.

Dr. SAFER. So, it is left open-ended.

The CHAIRMAN. I would leave it open-ended.

Mr. LICHTBLAU. At that time you would actually reduce the SPR if somebody would take the oil out and sell it in a commercial market. You physically reduce the SPR, which may not be a desirable thing to do. If somebody has 100 million barrels in there, the five-year lease is up, you cannot make an agreement to renew it, and that owner says I want my oil out of SPR.

The CHAIRMAN. But the government is not without its powers. It can say at the end of five or ten years. We need that. We cannot reduce the reserves. So, therefore, we will pay you the market price. We will go off budget at that time or we will put it on budget.

Dr. SAFER. Anything is possible. I would only urge two main things. Number one is, I think the government should try to get as long a term a lease as it possibly could, and it is only done through negotiation.

The second point I would make is I think competitive bidding and by potential lessors might be a very effective means of getting an oil lease contract at minimal cost to the government.

As you mentioned, there is another proposal very similar to what we heard today by some folks in Texas, and who knows what others might come up with a proposal. I think competitive bidding for this kind of thing might be the way to do.

The CHAIRMAN. The thing that is surprising to me is that there are no more proposals right now to DOE, and I want to be sure when we legislate here if we draw up our bill in June that we have all the laws to accommodate the kind of proposal that we are talking about.

I do not know whether any lawyers have actually looked at it in a hard, tough way.

Dr. SAFER. Another issue has arisen. That is, the contract between the government and the lessor to pay him annually, is that an appropriation that Congress must approve annually or is that a commitment that the government can make for the next five years, ten years or whatever the term of the lease is?

I gather that it has to be basically an appropriation or obligation of the federal government.

The CHAIRMAN. It would be scored as a budget authority, all taken in the first year for budget authority, but in terms of outlays, it would only be the outlays that are actually paid.

Dr. SAFER. On the basis of a bond, I do not think you would have that because that is a financial instrument, and I think that would go under like a treasury bond or anything like that. That is a full faith and credit obligation of the government.

The CHAIRMAN. It is still for the purpose of scoring we have budget authority and we have budget outlays, and outlays are usu-

ally the more difficult thing to get, and so it would clearly be a budget authority.

Dr. SAFER. What I am saying is the bond does not require some of that because it is similar to any financial instrument of the federal government.

The CHAIRMAN. Unless you are going to go off budget, then the government should not issue the bonds. They ought to be issued privately. But the obligations under the lease would be budget authority, X amount a year times the number of years.

But the outlays which is what we really try to get in the budget process would only be the year-to-year—only scored in the year in which the money was actually outlaid.

Dr. SAFER. So, you are coming the concept of the lease with the concept of the bond together in one?

The CHAIRMAN. It is—as far as the government is concerned, it is only a lease. As far as the private enterprise, LL&E, for example—if I were LL&E, I would go to a bond house and say why do you not give us the money to do this and go to the market and borrow the money on bonds.

Dr. SAFER. I would add one other consideration that struck me with respect to examining the proposal of the competitive LL&E. It was not clear what the relationship was between the lessor, the particular company and the foreign oil exporting country.

I think that the government should know what those terms may be. If it is simply a purchase by, say, LL&E of the oil for deposit in this reserve and then a lease to the government, that would be one thing. But whatever relationships there might be, I think should be spelled out.

The CHAIRMAN. Why is that of interest to the government?

Dr. SAFER. I think it would simply be prudent politically to know who the supplier of that oil might be and to the extent that it might impact upon any other foreign policy interests of the United States.

The CHAIRMAN. Where would it make the difference?

Dr. SAFER. Practically speaking, it might not. But if it were Libya or Iran or any other country where we might have some difficult relations, I think that probably might come under some fire politically for perhaps irrational reasons. But I think it is better to say up front it is XYZ country. They are kind enough to lease this oil to us for this price, and it should be known to the public rather than let us say less well publicized.

Mr. LICHTBLAU. There is another aspect. I think if private companies buy their oil from an OPEC country, they are likely to get market prices and nothing less. If the government is involved, the U.S. government and says we guarantee this oil will not enter the market but will go into this storage and stay there and it is not commercial, I think it is more likely that the foreign government will say we either sell it or lease it to you at substantially lower value than the present market value.

If any company just goes to Saudi Arabia, Venezuela or anywhere else and says we would like to buy 20,000 barrels a day which we will put in the SPR, I think that country would have to say well, you know what our price is. It is $21 or whatever. But if this is a special deal where the U.S. government stands behind it

saying this is noncommercial oil and will not be commercial except in an emergency, I think there is a justification, then, for that country to say all right, we will sell it or lease it.

The CHAIRMAN. Well, now, that would not take a change in law. That would be by contract, would it not?

Mr. LICHTBLAU. I think so. I think it would be by contract, yes. It could be done right now. I mean the SPR could right now go to Venezuela and say would you sell us some oil for SPR at a lower price.

The CHAIRMAN. Why would not LL&E or another lessor be the appropriate one to do that?

Mr. LICHTBLAU. Because the foreign government, Venezuela might say, oh, you are just another oil buyer. You are just somebody who buys oil for their own purposes and we cannot sell you oil at a much lower price than the market price.

The CHAIRMAN. It would not be selling it in that case. LL&E would say we will make this available to you, the storage capacity available to you at X dollars, and you will own the oil. You will not be able to speculate on it, and it will be drawn down only in accordance with this lease, and here is the lease with the government.

Mr. LICHTBLAU. The government would have to be behind it because ultimately this is U.S. government SPR, not private oil. So, the government would have to be behind it to see to it that this——

The CHAIRMAN. By contract?

Mr. LICHTBLAU. Yes, by contract, but it remains outside of normal commercial channels and that there is no misuse of this, that somebody buys it at a much lower price is and it ends up using it somehow in the market. I think that would be major concern on the part of the supplier.

The CHAIRMAN. It is amazing to me that these deals have not been put together and offered.

Mr. LICHTBLAU. I agree with you. But a lot of talk—there has been a lot of talk and banks have looked into it and some banks would love to finance this sort of thing.

The CHAIRMAN. Some finance houses came to talk to me some years ago. They had another scheme where the government would own the oil. Now, when the government owns the oil, it is very difficult to do it and make much sense. But where somebody else owns the oil and leases it to the government, it is very easy.

Dr. SAFER. I think it is very important to know all the terms of the contract and that it be available for the public record who owns the oil whether it is LL&E or the foreign government or who the foreign government is and what the terms are of the contract.

The CHAIRMAN. The contract would be very straightforward as far as the government is concerned. All they want to do is have, in effect, custody and control of the oil, be able to get it if they need it at the market price. You would have to define what the market price and how you arrive at it, just ordinary contract, straightforward negotiation. As far as the bond company is concerned, that is up to them how they go to the market, what kind of security. But there are all kind of attractive ways to do that. It could be attrac-

tive for a foreign country as well, and that would depend upon how OPEC treats it.

Dr. SAFER. I expect after these hearings this proposal today and the one we saw a year or so ago that some others will come out of the woodwork.

The CHAIRMAN. Well, I would hope so.

Gentlemen, thank you very much. You have been very helpful to us, and I hope this thing will move rapidly because as I say, we intend to mark up quickly. Thank you very much.

[Whereupon, at 12:35 p.m., the hearing was adjourned.]

APPENDIX

RESPONSE TO ADDITIONAL QUESTIONS

Department of Energy
Washington, DC 20585

June 6, 1989

The Honorable J. Bennett Johnston
Chairman
Committee on Energy and Natural
Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

On May 4, 1989, J. Allen Wampler, Assistant Secretary for Fossil Energy appeared before your committee to discuss S. 694, the Strategic Petroleum Reserve Amendments of 1989.

Following that hearing, you submitted written questions for our response to supplement the record. Enclosed are the answers to those questions.

If you have any questions, please have your staff call Frances Bryant on 586-4277. She will be happy to assist.

Sincerely,

for Robert G. Rabben
Assistant General Counsel
for Legislation

Enclosures

cc: The Honorable James A. McClure
Ranking Minority Member
Committee on Energy and Natural Resources

QUESTIONS FROM SENATOR JOHNSTON

One Billion Barrel SPR

Question 1: On February 8, 1984, Energy Secretary Don Hodel testified before this committee and argued that the appropriate size of the SPR is that which provides 90 days of U.S. oil imports. He was trying to justify the Administration's proposed fill rate on the grounds that, although less than what the law required, it would be enough to keep 90 days of supply of oil in the ground.

Does this Administration agree with the 90-day yardstick as an appropriate measure of adequate SPR protection?

(If they do then clearly 750 million barrels won't be enough given EIA's projected oil imports.)

Answer: The Administration has endorsed the prompt completion of a 750 million-barrel Strategic Petroleum Reserve and has announced plans to conduct an interagency policy review on the ultimate size of the Reserve, to be completed this year.

Pending completion of this review, no specific yardstick for adequacy of the SPR has been endorsed. In general, we think that higher levels of oil imports imply higher vulnerability to supply disruptions. From this perspective, there is a relationship between the size of the SPR and average daily U.S. oil import levels, so the days-of-protection measure is a useful indicator of trends over time. However, there are other important considerations -- including the sources of crude and product imports, political and economic conditions in oil exporting regions, national security and foreign policy concerns, energy security measures taken by the U.S. private sector and our allies -- which will contribute to decisions on this matter.

QUESTIONS FROM SENATOR JOHNSTON

Predrawdown Diversion of Oil

Question 2: Your statement indicates that the provision in S.694 for predrawdown diversion of oil "remains under active consideration by the Department". Actually, this language was considered by DOE and adopted by this Committee in the Reagan Administration. It was noncontroversial.

What's the reason for your reluctance to support it--do you simply lack an Administration sign-off? When will we get that?

Answer: The Department recommended that Congress enact a simple five year extension to the Strategic Petroleum Reserve legislative authorities to give the Administration time to consider possible needed changes to such authorities. However, we are now able to advise you that the Department supports such a provision in principle.

QUESTIONS FROM SENATOR JOHNSTON

Alternative Financing Proposals

Question 3: If the NPR isn't sold, how much oil under current prices can you purchase with the funding requested in your 1990 budget?

Answer: The current delivered price of oil for the Strategic Petroleum Reserve is approximately $19.50 per barrel. At this price, the $126,962,000 requested for oil acquisition in FY 1990 would buy 6.5 million barrels, which translates to an average fill rate of about 18 thousand barrels a day.

QUESTIONS FROM SENATOR JOHNSTON

Leasing Oil and Facilities

Question 4: Does DOE currently have the authority to lease private oil and private facilities as a part of the SPR?

Answer: The Department long has been of the view that the authorities contained in Title I, Part B of the Energy Policy and Conservation Act (EPCA) include both the authority to lease private storage facilities and, under appropriate circumstances, the authority to store privately owned oil in Strategic Petroleum Reserve storage facilities. The authority to lease private facilities is expressly stated in EPCA section 159(f)(C). The view that oil not owned by the Federal Government may be stored, such as under a "lease," has been based on the section 160(a) and section 159(f)(E) authorizations to acquire oil by purchase, exchange, "or otherwise," and on the section 154(e)(10) requirement to identify the owners of oil stored in the Reserve "in any case where such products are not owned by the United States".

However, legislative authority to enter into leases does not eliminate the need for budget authority sufficient to enter into multi-year obligations. In addition, current law establishes certain minimum size and fill rate criteria for the SPR, and imposes specific limitations on SPR drawdown. If the Federal Government leased private oil or facilities, it would need to be prepared both to obligate funds to cover the lease commitment and to relinquish the leased property at the end of the term.

QUESTIONS FROM SENATOR JOHNSTON

Leasing Oil and Facilities

Question 5: You have had at least one proposal for leased storage for 100 million barrels of oil at a lease rate equal to the T-bill rate, have you not? Without mentioning the name of the company, how would that work?

Answer: The Department has received a number of tentative proposals for leasing oil and/or facilities for the Strategic Petroleum Reserve. At least one alluded to the potential for financing costs at or near the T-bill rate. One proposal involved paying a management fee equal to a Treasury bond rate to lease 100-300 million barrels of oil for a long term. The lessor also would have provided storage for the oil at no cost. Any price appreciation for the leased oil--in the event of its sale in an emergency drawdown, for example--would accrue to the lessor. In addition, it would have been possible under the proposal for a foreign firm or government to own the oil and, therefore, to benefit from any price appreciation.

This leasing proposal and other alternative financing proposals were analyzed in SPR Financing Alternatives, a study performed for the Department by Energy Futures Group and provided to the Committee late last fall. As can be seen from the study, SPR financing proposals often are complicated and frequently are subject to modification by their proponents. Analyzing their economic costs and benefits, as well as their non-economic ramifications, can be a particularly complex task.

QUESTIONS FROM SENATOR JOHNSTON

Leasing Oil and Facilities

Question 6: If you did lease facilities, it is clear that salt domes on the Gulf Coast, preferably tied into the Capline Pipeline, are the way to go, is that correct?

Answer: The preferred facilities for SPR crude oil storage would be Gulf Coast salt domes (for economical and secure storage) with direct pipeline access to marine distribution facilities. Marine distribution offers the greatest flexibility in meeting a broad variety of potential disruption demands.

QUESTIONS FROM SENATOR JOHNSTON

Leasing Oil and Facilities

Question 7: In leasing proposals for the SPR, what conditions should the Government insist on -- such as total control over the disposition of the oil during the lease term?

Answer: It is likely that there would be tradeoffs between the Government's cost and the degree of Government control. If an alternative financing proposal were to be a complete substitute for Government financing and ownership, we anticipate that the Government might seek to retain the following types of controls:

- The Government would maintain custody of the oil or be in a position to assure itself that it could take custody under all circumstances.
- The fact that oil in the SPR might be owned by investors would not entail a right on their part to remove the oil from the SPR within the period of the lease term.
- The President would need to be able to authorize a drawdown of the oil and to have that oil sold into the market according to the SPR Distribution Plan and as implemented through the SPR Standard Sales Procedures.
- The Government must be able to ensure the security, safety, and integrity of any leased storage systems.

QUESTIONS FROM SENATOR JOHNSTON

Naval Petroleum Reserve Taxes

Question 8: What state and local taxes would a purchaser of the NPR pay on the production or sale of NPR oil that the U.S. government would not have to pay?

Answer: A private owner of Elk Hills would be subject to taxation by the State of California and Kern County unless the new owner enjoyed a tax exempt status. The following are taxes from which the Federal Government is exempt but which a private company, if not exempt, would be obliged to pay:

1. California State Income Tax
2. California Crude Oil Severance Tax
3. California Natural Gas Severance Tax
4. Kern County Real Property Tax
5. California Sales and Use Tax

QUESTIONS FROM SENATOR JOHNSTON

Naval Petroleum Reserve Taxes

Question 9: By what amount do you expect these anticipated taxes would depress the potential purchase price?

Answer: As the Department indicated in its July 1, 1987 report on divestiture, the net present value of Elk Hills consists partly of imputed taxes. Therefore, as currently proposed by the Administration, the buyer of the Reserve would make payment in the form of four flows of assets: an initial cash payment, a stream of oil over a six year period, Federal income taxes, and a stream of State and local taxes. In 1987 the Department estimated that the net present value of all of the taxes collected by California and Kern County would have a net present value of $500 million if the pre-tax discounted cash flow from the field was expected to be $4.5 to $4.9 billion. Thus State and local revenues could represent on the order of 10-11 percent of pretax discounted cash flows.

QUESTIONS FROM SENATOR JOHNSTON

Hawaii Regional Petroleum Reserve

Question 10: You testified that a regional petroleum reserve in Hawaii would cost about $15 per barrel. Please itemize the components of this cost and their contribution to the total.

Answer: In the Report to Congress on the Expansion of the Reserve to One Billion Barrels, the Department stated that a regional petroleum reserve in Hawaii would cost $15+ per barrel. This "+" was used because real estate was not included due to the uncertainty in site location.

The estimated development cost for a 10-million-barrel storage facility in Hawaii is as follows:

Tanks and Dikes Construction	$ 82,878,400
Civil/Structural	4,767,400
Mechanical/Piping	4,798,200
Electrical/Instrumentation	2,455,200
Support Facilities	2,516,800
Security Systems	3,896,000
	$101,312,000
Project Engineering Design and Construction Management (25%)	25,328,000
Subtotal	$126,640,000
Project Contingency (20%)	25,328,000
	$151,968,000

Approximately $15.00/BBL

Answer 10
Continued:

A steel tank storage site would require approximately 200 acres of land. Industrial land cost on Oahu, in the vicinity of the refineries, would cost in the range of $70-75 million, adding over $7.00/BBL. Significant reductions in land cost could be obtained by remotely locating storage on other islands and relying on barge or tanker movements.

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

May 31, 1989

The Honorable J. Bennett Johnston
Chairman, Committee on Energy and
Natural Resources
United States Senate

Dear Mr. Chairman:

As requested in your May 15, 1989, letter, enclosed are our responses to four questions for inclusion in the record of the May 4, 1989, hearing on the Strategic Petroleum Reserve Amendments of 1989. Please contact me should you have any additional questions.

We appreciated the opportunity to present our views on the important issues that your bill addresses and look forward to working with the Committee in the future on matters pertaining to the Strategic Petroleum Reserve, as well as other energy issues.

Sincerely yours,

Flora H. Milano

for Keith O. Fultz
Director, Energy Issues

Enclosure

RESPONSES TO QUESTIONS

Q. Among the 40 odd alternative financing methods that have been put forth is the Administration's proposal to sell the NPR. I believe you indicated in testimony on the House side that GAO does not believe that the NPR can be sold in FY 1990. Is that correct? Why?

A. Yes, that is correct. In response to a question by the Chairman, Subcommittee on Energy and Power, House Committee on Energy and Commerce, we stated that we do not believe that the Department of Energy (DOE) can complete all of the actions necessary in order for it to sell the NPR in an efficient, cost effective manner within that timeframe. The reasons that we do not believe this can be done are that DOE needs to

-- improve the accuracy of reserve data at NPR-1 through geological and engineering studies;

-- determine, through negotiation and on the basis of geological analysis, its equity position with its partner, Chevron, at NPR-1;

-- negotiate a new Unit Plan Contract with Chevron;

-- resolve a lawsuit brought by the State of California over ownership of two sections of the field at NPR-1;

-- establish a sales plan that adequately addresses anti-trust concerns; and

-- allow time for adequate congressional oversight of the proposal.

Q. What is your view of the proposed NPR sale--your testimony said that you have consistently recommended against asset sales that help the deficit in the short-run, but hurt it in the long-run? Does DOE know now what the oil and gas reserves are at Elk Hills--do we know what we would be selling?

A. We believe that there is still uncertainty regarding the amount of oil and gas that can be recovered at NPR-1 and, therefore, the price the government should receive if it sells the reserve. As discussed in our report Naval Petroleum Reserve No. 1: Examination of DOE's Report on Divestiture (GAO/RCED-88-151, August 25, 1988), before selling the NPR, DOE needs to ensure that the sales price of NPR-1 at least equals the value to the federal government of the net income stream NPR-1 would produce if the government retained it. To make such a determination, DOE needs to have accurate and up-to-date

information on the oil and gas reserves that can be recovered at NPR-1.

In its June 1987 report to the Congress, entitled Divestiture of the Naval Petroleum Reserves, Shearson Lehman Brothers, Inc., noted that a variety of uncertainties exists as to how much oil and gas are present at NPR-1 and can be produced. Accordingly, the report recommended that DOE contract for a comprehensive reserve study by a petroleum engineering consultant. Subsequently, DOE hired such a firm to develop accurate reserve estimates at NPR-1 and present them in a July 1988 report. However, rather than resolving the issue, the contractor's report recommended that 33 additional studies be performed to address uncertainties relating to the reserve data. Only part of this work is now underway. Thus, the issue of uncertainty regarding the recoverable oil and gas reserves at NPR-1 has not been resolved.

Q. Would you elaborate on your view of the SPR leasing oil and facilities? You indicate that the "rent" would have to reflect the cost of the private sector borrowing money to buy oil.

A. In general, it appears that leasing oil from a private domestic firm is likely to be more costly over the long term than purchasing the oil, but that leasing storage space may have advantages that are worth studying. As we stated in the May 4 hearing, our report Strategic Petroleum Reserves: Analysis of Alternative Financing Methods (GAO/RCED-89-103, March 16, 1989) discussed the possibility of leasing oil and/or regional storage space from a private domestic firm. In the case of leasing oil, we assumed that the firm would acquire the oil for essentially the same price that the government now pays to purchase oil and would then lease the oil to the government. These lease payments would reflect the cost of oil, the firm's opportunity cost of money, which will almost certainly be higher than the comparable cost of money to the government, and a profit over and above its costs. As a result, the long-run cost to the government would be higher than if the government purchased the oil.

We recognize that proposals have also been made in which the government would (through an intermediary) lease oil that is owned by a foreign government. Such proposals assume that the foreign government would lease oil that it could not sell because of production quotas and thus would be willing to lease the oil at a rate that is at or near the Treasury's borrowing rate. Because such proposals involve foreign participation, they were outside of the scope of our study. However, if such proposals are feasible, they would appear to be more attractive from a financial standpoint than the leasing proposals we discussed in our report.

With regard to leasing facilities, our report noted that there could be advantages to leasing regional storage facilities in that they could facilitate distribution of SPR oil. It is also conceivable that a private entity may have unused storage space available or be able to construct and operate facilities at a lower cost than the government. As discussed in our statement, if a decision is made to expand the SPR beyond the 750-million-barrel level, we believe that it makes sense to study the advantages of leasing privately owned storage facilities rather that constructing additional facilities.

Q. Your study indicates that all in all you would prefer to buy SPR oil as we do now. So would I--if we had the money. If you had to pick one or more alternative financing mechanisms that offended you the least, which would they be?

A. We cannot recommend a "least offensive" alternative to the present method of financing the SPR. On the basis of our review of the information contained in the proposals we identified, we cannot say with certainty that any of them would preserve the advantages of the current process (e.g., maintaining government control over the oil) while lowering the cost of acquiring and financing oil over the long term. We recognize that some of those who proposed the revenue raising alternatives we reviewed (e.g., indexed bonds and the leasing proposal discussed above) have claimed that the proposals can reduce the government's total cost of acquiring and financing oil. If the Committee wishes to consider such proposals, it may wish to focus on ones that can be tested in the market place to see whether they can actually save the government money before they are implemented on a large scale.